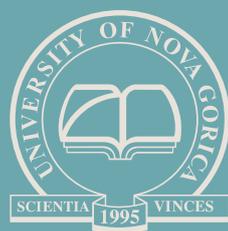


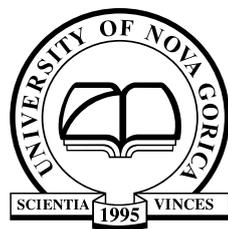
U N I V E R S I T Y O F N O V A G O R I C A



Annual Report of the University of Nova Gorica 2017

U N I V E R Z A V N O V I G O R I C I

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Annual Report of the University of Nova Gorica 2017

U N I V E R Z A V N O V I G O R I C I

Fakulteta za znanosti o okolju
v Novi Gorici

Ustanovljena: 24. 9. 1995

Ustanovitelja:

Mestna občina Nova Gorica

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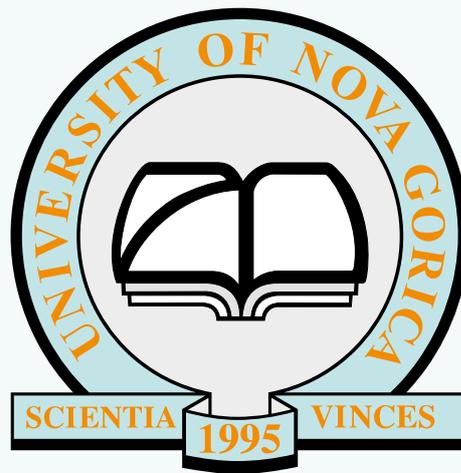


Introduction

In 2017, the activity of the University of Nova Gorica incorporated undergraduate and graduate studies, as well as research work, artistic endeavours and development projects. The pedagogical work was carried out within the scope of seven schools. By the end of 2017, 202 people earned their PhDs, 350 got their Master's degree, and 833 completed their studies with a Bachelor's degree. The research activity was carried out in six centres and four laboratories.

The University of Nova Gorica is becoming more and more oriented towards the international work space. In 2017, 45% of students were foreigners. They came from 47 different European countries as well as from other continents. Moreover, the University is turning into a welcoming and attractive work environment for foreign scientists and professors, hence the number of foreign professionals who are employed at the UNG is constantly increasing; at the end of 2017, 24% of all the employees were foreigners.

In 2017, we were specially proud of the results of the international RUR chart (Round University Ranking) which grades and categorizes the best universities in the world. The University of Nova Gorica ranked really high (186th), right there among the world's institutions of higher education elite. By that, it improved its exceptional result from the year 2016, when it was ranked as 203rd. The European Union also recognized the excellence of the University of Nova Gorica, as the results on the 2017 U-Multirank - the international ranking of higher education institutions - showed that our university surely can reach exceptionally high. What was accentuated were our university's research field, its international scope, as well as its connectedness to the regional topics. Comparing the "U-Multiranking 2017" results of other universities in the broader region that expands the Slovenian borders, we can see that the University of Nova Gorica is by most of the standards and criteria the best university. It is not only better than other Slovene universities, but also older and bigger universities in our vicinity (University



of Graz, University of Trieste, University of Padova, University of Zagreb).

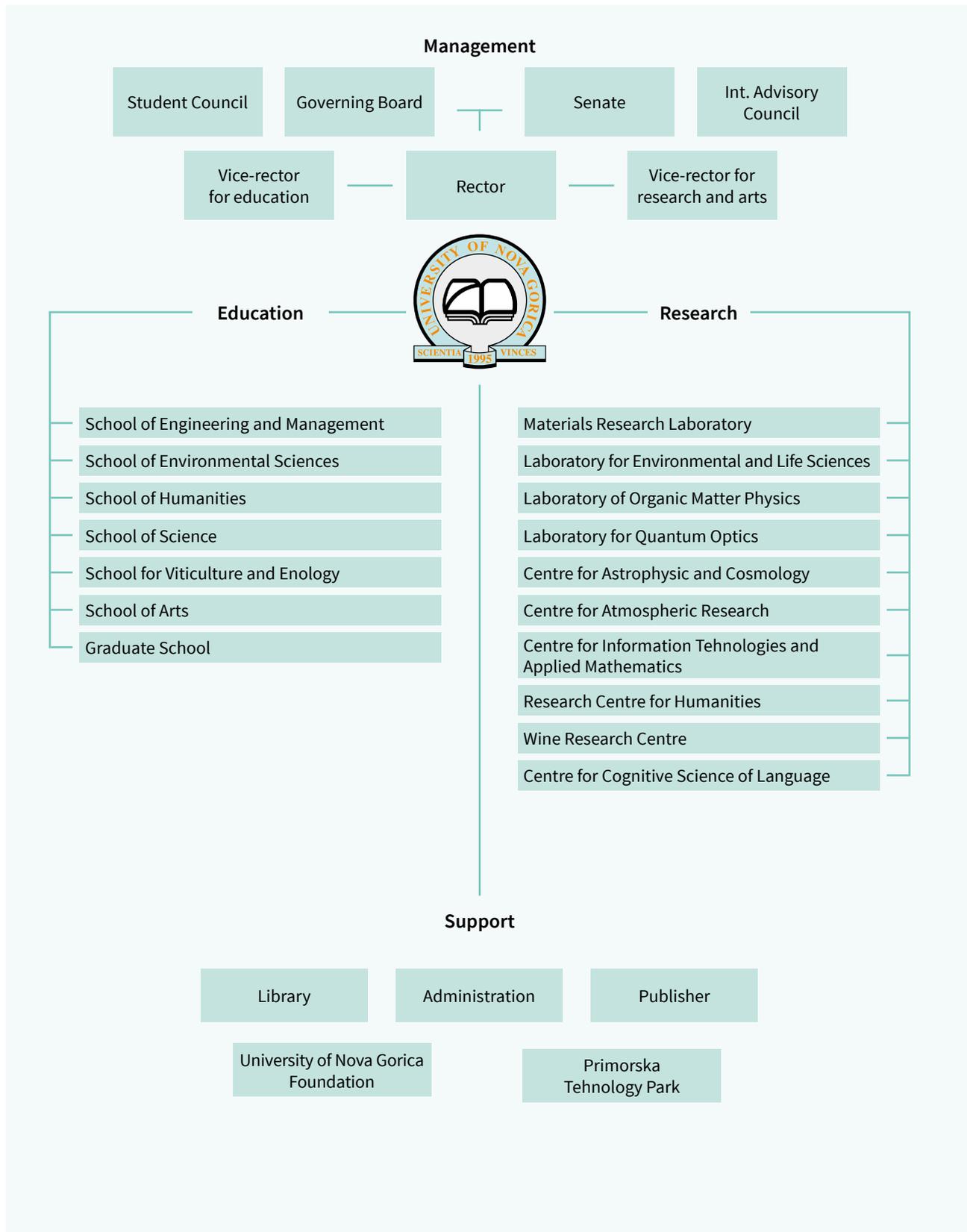
We would particularly like to point to the people who are associated with the University of Nova Gorica. Prof. Dr. Gregor Mali received the Zois award for important scientific achievements in the area of nuclear magnetic resonance of materials. The President of the Republic of Slovenia, Borut Pahor awarded Prof. Dr. Kozma Ahačič with the "Apple of Inspiration" award. Ahačič is also the recipient of the Golden Sign ZRC SAZU award. Apart from our faculty members, also two of our students received recognition. Aleksej Jurca won the gold medal at the international Olympiad on Astronomy and Astrophysics. Additionally, the President of the Republic of Slovenia awarded him the "Apple of Inspiration" for his extraordinary achievement. At the European Contest of Young Wine Experts Vanesa Klinec came in second.

In 2017, we got a new doctor honoris causa, a professor emeritus, an honorary member, and a recipient of the golden plate of the University of Nova Gorica. The doctor honoris causa of the University of Nova Gorica was given to the world-renowned heart surgeon of Slovene origin Prof. Dr. Igor D. Gregorič for extraordinary scientific and professional achievements in the field of cardiology. The title professor emeritus was

given to the first provost of the University of Nova Gorica, Prof. Dr. Boštjan Žekš, namely, the title was awarded in relation to his setting excellency standards for pedagogical and scientific activities at the University of Nova Gorica. Prof. Dr. Paolo Samorì from Strasbourg became the honorary member of the University of Nova Gorica, as he contributed immensely to the development of scientific excellence at the University of Nova Gorica in the field of organic electronics. Finally, the golden plate was given to Mag. Mitja Jermol for important contribution towards the development of material opportunities for the University of Nova Gorica. We also awarded the "bronze donor to the University of Nova Gorica Foundation" title; it was given to Fedor Tomažič.

The year 2017 will be remembered as the year of two exceptional successes of Slovene physicists. The international team of astronomers and astrophysicists brought us into the new era of astronomy by making the first ever multi-messenger observation involving gravitational waves. The Pierre Auger observatory showed that the ultra-high-energy cosmic rays come from outside the Milky Way and are therefore of extragalactic origin. The researchers from the University of Nova Gorica participated in both of these two discoveries.

Organisational Structure



Staff structure

As of December 2017, the University of Nova Gorica had a total of 146 regular staff members (of which 31 were shared employees with primary employment at another institution). This included 85 doctors of science, 19 research assistants, another 16 holders of bachelor's or master's degree, 20 administrative personnel, 3 librarians, 1 maintenance officer and 2 photocopy clerks; 35 staff members were foreign nationals.

	Regularly employed	Supplementary employed
2006	66	16
2007	89	22
2008	93	51
2009	113	57
2010	114	67
2011	124	49
2012	137	42
2013	130	42
2014	147	37
2015	121	33
2016	117	29
2017	115	31

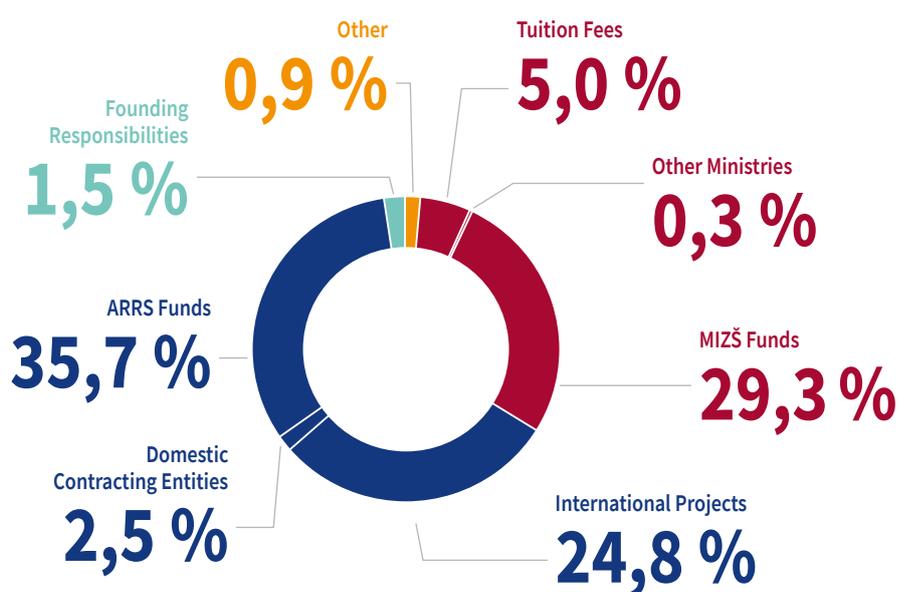
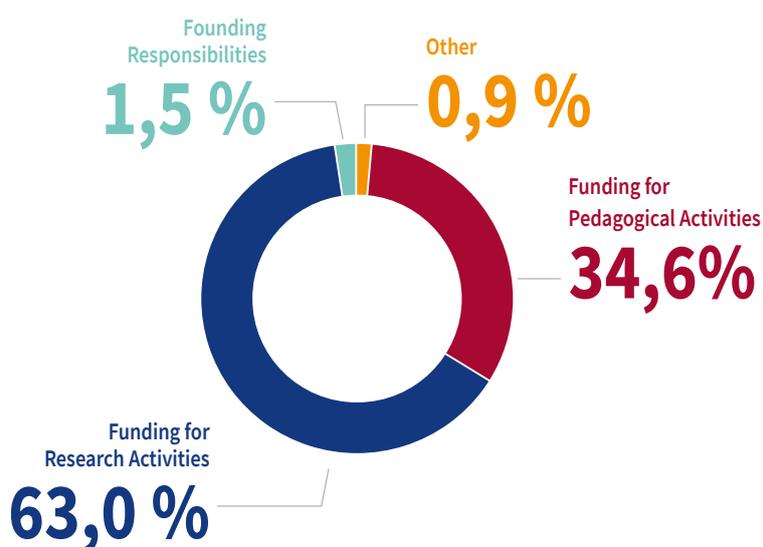
In addition, collaborating with the university were also over 200 adjunct faculty from other Slovenian universities and from universities outside of Slovenia.

State	Nr. collaborators
Austria	1
Bulgaria	2
Egypt	1
France	2
Croatia	2
India	1
Italy	13
Kazakhstan	1
China	2
Macedonia	1
Germany	1
Pakistan	2
Poland	1
Romania	1
Russia	1
Ukraine	3
Total	35

Financial Report

The University of Nova Gorica receives its funding from tuition fees, educational and research projects that are financed by the Slovene Ministry of Education, Science and Sport (MIZŠ) and the ARRS (Slovenian Research Agency), the income of the founders, international and industrial projects, as well as from various donations. In 2017, the University of Nova Gorica obtained about EUR 7,125 million of assets (cash flow) from the below listed sources:

Founding Responsibilities 1,5 %
Funding for Research Activities 63,0 %
ARRS Funds 35,7 %
Domestic Contracting Entities 2,5 %
International Projects 24,8 %
Funding for Pedagogical Activities 34,6 %
MIZŠ Funds 29,3 %
Other Ministries 0,3 %
Tuition Fees 5,0 %
Other 0,9 %
TOTAL 100,0 %



Prizes and awards

Employee awards in 2017

ZRC SAZU "golden sign" award, April 2016

Prof. Dr. Kozma Ahačič

Zois Prize for 2017, State Award for Science,
November 2017

Prof. Dr. Gregor Mali

"Apple of inspiration", President of the Republic
Slovenia Borut Pahor Award, December 2017

Prof. Dr. Kozma Ahačič

Student awards in 2017

Second place and a silver medal, European
championship of Young wine specialists, Paris,
March 2017

Vanesa Klinec

First place, 11th International Olympiad on
Astronomy and Astrophysics, Thailand, November
2017

Aleksej Jurca

"Apple of inspiration", President of the Republic
Slovenia Borut Pahor Award, December 2017

Aleksej Jurca

Honorary Degrees in 2017

Doctor Honoris Causa

Prof. Dr. Igor D. Gregorič

Honorary Member of the University of Nova Gorica

Prof. Dr. Paolo Samorì

Professor Emeritus

Prof. Dr. Boštjan Žekš

Golden plate of the University of Nova Gorica

Mag. Mitja Jermol

Student Alumnus Alumnus primus

Gašper Čefarin

Manca Koren

Student Award Alumnus Optimus

Jacopo Segato

Maja Tišma

Ikram Muhammad

Ana Cukjati

Jani Rijavec

Tina Šuligoj

Natalia Mikhaylina

Aleš Bogovič

Important Events



○ FEBRUARY

The Director of the International School for Advanced Studies visited the University of Nova Gorica

On 7 February, the Director of the International School for Advanced Studies, Prof. Dr. Stefano Ruffo visited the University of Nova Gorica's premises (University Center) in Ajdovščina.

The guest was welcomed by the Rector of the University of Nova Gorica, Prof. Dr. Danilo Zavrtanik, Vice-rectors, Prof. Dr. Guido Bratina and Prof. Dr. Mladen Franko, as well as the Head of the Laboratory for Quantum Optics, Prof. Dr. Giovanni De Ninno. A brief introduction of both institutions followed and then they proceeded with talks on the possibility of mutual collaboration in the sphere of education.

The visit ended with the viewing of the research laboratories and centers at the University Center in Ajdovščina.



MARCH

Representatives of the Government of the Republic of Slovenia Visit the Goriška Region

Select representatives of the Government of the Republic of Slovenia visited the Goriška Region on 6 March.

The Government representatives first met at the working meeting at the University of Nova Gorica's premises in Vipava, namely, at the Lanthieri Mansion.

Before the working meeting started, a shorter meeting had taken place between the Slovene Primer Minister, Dr. Miro Cerar and the Rector of the University of Nova Gorica, Prof. Dr. Danilo Zavrtanik.

Incorporated in the regional visit of the representatives of the Republic of Slovenia's Government was also our hosting of State Secretary at the Government Office for Development and European Cohesion Policy, Franc Matjaž Zupančič, and the Director of the Cohesion Policy Office, Bojan Suvorov, MSc. They inspected the CITIUS Project, which was co-financed with the help of the Slovenia-Italy 2007-2013 Cross-Border Cooperation Program.

In the afternoon, we hosted the Minister of Education, Science and Sport, Dr. Maja Makovec Brenčič, and State Secretary at the Ministry of Education, Science and Sport, Dr. Tomaž Boh at the University's headquarters in Rožna Dolina. The discussion that was held focused on the future development of the University of Nova Gorica.

The visit of the representatives of the Government of the Republic of Slovenia ended at the Slovene National Theater Nova Gorica, where the final discussion titled "Regional Developmental Dialogue on the Northern Primorska Region" took place. The Rector of the University of Nova Gorica, Prof. Dr. Danilo Zavrtanik also attended the discussion.

MARCH

A Visit of the Parliamentary Group of the United Left

On 27 March, the University of Nova Gorica hosted the parliamentary group of the United Left party that was on a one-day visit in the larger Goriška Region.

At the University's center in Ajdovščina, the head of the parliamentary group, Luka Mesec and the Member of Parliament, Dr. Matej T. Vatovec, were greeted by the Rector of the University of Nova Gorica, Prof. Dr. Danilo Zavrtanik and Vice-rector for research and arts, Prof. Dr. Gvido Bratina.

After the introductory presentation of the University, there was a discussion on the importance of the development of the University of Nova Gorica within the local and national context.

As part of their visit, the parliamentary group also looked at the research laboratories and centers at the University's center in Ajdovščina, and moreover, they visited the School of Arts of the University of Nova Gorica in Gorizia.





○ APRIL

The Italian Ambassador to Slovenia visits the University of Nova Gorica

On 20 April, the University of Nova Gorica hosted the Italian Ambassador to Slovenia, His Excellency, Paolo Trichilo. During his courtesy visit, he was accompanied by Iva Palmieri, the Consul General in Koper, as well as Stefano Cerrato, the Cultural Attaché at the Italian Cultural institute in Slovenia.

The guests were greeted by the Rector of the University of Nova Gorica, Prof. Dr. Danilo Zavrtanik and the Vice-rector for Research and Arts, Prof. Dr. Gvido Bratina.

After the guests got familiarized with the University's pedagogical and research activities, they discussed possible collaboration between the University of Nova Gorica and various Italian institutions. Both the Rector and the Ambassador agreed that it would be possible to further the already existing positive partnership.

At the end of the visit, the guests went to see the travelling exhibition dedicated to the sixtieth anniversary of the Roman Contracts, 1957-2017, titled "Ever Closer Union", which is hosted by the University of Nova Gorica and on display between April 14 and April 26. The exhibition is organized by the Historical Archives of the European Union (European University Institute), in collaboration with the European Parliament, the Council of the European Union and the European Commission.

MAY

A Visit of the Ambassador of the United Kingdom of Great Britain and Northern Ireland to Slovenia

On 16 May, her Excellency Ms Sophie Honey, the Ambassador of the United Kingdom of Great Britain and Northern Ireland to Slovenia paid the University of Nova Gorica a courtesy visit.

At the University of Nova Gorica's premises in Rožna Dolina, the Ambassador was greeted by the Rector, Prof. Dr. Danilo Zavrtanik, and Vice-rectors, Prof. Dr. Gvido Bratina and Prof. Dr. Mladen Franko.

Their meeting revolved around our current projects and plans for the future. The Ambassador and the Rector both expressed a keen interest for a closer collaboration between the two countries in the sphere of pedagogical and research activities as well as student exchanges.

The Ambassador's visit was part of her visit of the Municipality of Nova Gorica.





○ MAY

The Shanghai Women's Federation pays a visit to the University of Nova Gorica

On 19 May, the Vice-rectors of the University of Nova Gorica, Prof. Dr. Guido Bratina in Prof. Dr. Mladen Franko welcomed the representatives of the Shanghai Women's Federation at the Lanthieri Mansion.

The Shanghai Women's Federation (SWF), founded in August 1950, is a women's organization working for the advancement of women under the leadership of the Chinese Communist Party. It not only provides a link between the government and women, but also works as a way of representing and protecting women's rights and promoting equality between men and women.

The Vice-rectors introduced the delegation to the work of the University of Nova Gorica. What followed was a conversation about potential collaboration in the field of education. Staff members and students from various Chinese universities who study at UNG were also present and they talked about their experiences with work and studies at the University of Nova Gorica.

After the official part of the visit, the representatives of the Shanghai Women's Federation paid a visit to the School for Viticulture and Enology and the Wine Research Center. The visit ended with the tasting of the university's wines.

MAY

The Ambassador of the Czech Republic Pays a Visit

On 30 May, Her Excellency, Ms Věra Zemanová, the Ambassador of the Czech Republic in Slovenia, paid a visit to the University of Nova Gorica. She was accompanied by her advisor, Mr Lubomír Bažant.

The Ambassador was greeted by the Rector of the University of Nova Gorica, Prof. Dr. Danilo Zavrtanik, as well as by the two Vice-rectors, Prof. Dr. Guido Bratina and Prof. Dr. Mladen Franko. The visit started with the introduction of the University

of Nova Gorica's work and various collaborations that the University has with the Czech Republic. Then, they all visited the School of Arts in Gorizia (Italy), as well as the School for Viticulture and Enology and the Wine Research Center in the Lanthieri Mansion, where the Ambassador tasted the university's wines.

At the end of the visit, the Rector, Prof. Dr. Danilo Zavrtanik and Her Excellency, Ms Věra Zemanová expressed a great interest in deepening collaboration in the field of pedagogical work and research activity.





○ MAY

The Head of the National Institute of Chemistry Pays a Visit

On 31 May, the Head of the National Institute of Chemistry, Prof. Dr. Gregor Anderluh, together with his two colleagues, Prof. Dr. Nataša Zabukovec Logar and Prof. Dr. Robert Dominko, visited the University of Nova Gorica.

He met with the University's management board, who introduced him the University's activities. This was a business meeting and it was focused on the possibility of deepening collaboration and the exchange of the know-how in the field of pedagogical and research work.

As part of this visit, Prof. Dr. Anderluh also visited the Laboratory for Environmental and Life Sciences in Rožna Dolina, the research centers at the University's venue in Ajdovščina, as well as the Wine Research Center in the Lanthieri Mansion in Vipava.

At the end of the visit, the Rector, Prof. Dr. Zavrtanik and Prof. Dr. Anderluh expressed a great interest in strengthening of the research collaboration and in joint graduate programs between the University of Nova Gorica and the National Institute of Chemistry.

○ JUNE

The Ambassador of the Ukraine Visited the University of Nova Gorica

On 1 June, following the invitation of the Rector of the University of Nova Gorica, Prof. Dr. Danilo Zavrtanik, His Excellency Mr Mykhailo F. Brodovych, the Ambassador of the Ukraine in Slovenia visited the University of Nova Gorica.

The visit took place at the Lanthieri Mansion; the two Vice-rectors, Prof. Dr. Mladen Franko and Prof. Dr. Gvido Bratina were also present. The University's Management Board familiarized the Ambassador with the pedagogical and research work of our institution. The talks were intended to establish an even richer and more beneficial collaboration between the University and Ukrainian institutions.

The meeting continued with the visit of the School for Viticulture and Enology and the Wine Research Center, which is also where the Ambassador completed his visit of the University of Nova Gorica.

During the visit, an agreement of collaboration in the field of science and education (as part of mutually beneficial relations between the Ukraine and Slovenia) between the University of Nova Gorica and the Vasyl Stefanyk Precarpathian National University was signed.





○ JUNE

Graduation Ceremony for Bachelor's, Master's, and Doctoral Students

On 1 June, the graduation ceremony for Bachelor's, Master's, and Doctoral students of the University of Nova Gorica was held at the Lanthieri Mansion in Vipava.

The School of Humanities and the School of Environmental Sciences produced three Bachelor degrees, the School of Arts had four Bachelor degrees, two Bachelor degrees the School for Viticulture and Enology and the School of Engineering and Management and one Bachelor degree the School of Science. There were also ten master's students who finished their studies. Moreover, the Rector of the University of Nova Gorica, Prof. Dr. Danilo Zavrtanik, promoted five new doctors of science who graduated from the Graduate School at the following study programs: Molecular Genetics and Biotechnology (Third Level), Physics (Third level), Environmental Sciences (Third Level), and Karstology (Third Level).

SEPTEMBER

The Signing of an Agreement between the University of Nova Gorica and the Azerbaijan State Agricultural University

On 15 September, the University of Nova Gorica and the Azerbaijan State Agricultural University signed a cooperation agreement that concerns joint mentorship for doctoral students and double doctoral degrees.

The agreement was signed as part of the opening of the academic year at the Azerbaijan State Agricultural University in Ganja, Azerbaijan. The agreement was signed by a representative of the University of Nova Gorica, Vice-rector for education, Prof. Dr. Mladen Franko, and a representative from the Azerbaijan State Agricultural University, their Rector, Prof. Ibrahim Jafarov.

The group of eminent guests also included the Azerbaijani Minister for Agriculture, Mr. Heydar Asadov.



OCTOBER

A Visit of the Bulgarian Ambassador at the University of Nova Gorica

On 4 October, the Ambassador of the Republic of Bulgaria to the Republic of Slovenia, H. E. Mr. Dimitar Abadjiev visited the University of Nova Gorica. He was accompanied by his advisor Ms. Julia Tzerova.

On the UNG's premises at the Lanthieri Mansion, they were greeted by Rector, Prof. Dr. Danilo Zavrtanik and Vice-rectors, Prof. Dr. Gvido Bratina and Prof. Dr. Mladen Franko.

After the official presentation of the University, they talked about mutual collaboration. At the end of the visit, the Ambassador and the Rector visited the Wine Research Center at the Lanthieri Mansion in Vipava, as well as the research centers and laboratories at the University of Nova Gorica's Research Center in Ajdovščina.

A Gala Opening at the Start of the New Academic Year.



OCTOBER

Gala Opening of the 23rd Academic Year

The main event at the opening of the 23th academic year took place on Thursday, 12 October at the Lanthieri Mansion in Vipava.

The Rector of the University of Nova Gorica, Prof. Dr. Danilo Zavrtanik greeted the audience and reminded the people that “the beginning of our University’s operations was a time accompanied by misunderstandings of our vision and our wish to ‘be different.’” The state and the local communities, with rare exceptions, often times didn’t show understanding for an institution that needs to be autonomous, independent and at the same time responsible. In spite of such beginning, the University of Nova Gorica, with persistence and dedication of all the employees and external collaborators, developed into a superb institution of higher education.”

Today the University’s pedagogical activities take place at seven Schools. Up to now the UNG has had 199 PhD graduates, 342 Master’s programs graduates and 821 Bachelor degree graduates. Research activities are conducted at six centers and four laboratories, all equipped with first-rate research equipment. We participate in smaller and bigger international projects and cooperate with esteemed institutions worldwide. Foreign students represent 45% of the student population and come from 44 countries, including Europe and other continents.

“2017 will be remembered as the year when the UNG finally shifted part of its activities to the Lanthieri Mansion in Vipava. Doing that, our long-awaited dream and a long-lasting project of the castle’s renovation fulfilled themselves and the Lanthieri castle began to glow in a new light. The University of Nova Gorica got a wonderful space at a notable and unique location, while Vipava as a town got its academic flair,” explained Prof. Dr. Zavrtanik in his speech.

This year we are also particularly proud of the results of the international RUR university ranking chart that evaluates and ranks world’s best universities. The University of Nova Gorica was placed very high, on the 186th place. So it is right there with world’s leading universities. Thus, it improved last year’s exceptional result – its placing on the 203rd spot. The EU also recognized UNG’s excellence, as the results of the global, international comparative platform for ranking universities U-Multirank 2017 showed that our university displays above-average results.

Excellence in research, international focus and regional integration were highlighted. Comparing the results the University of Nova Gorica achieved at U-Multiranking 2017 with the results of other universities within a broader region, including areas outside Slovenia, shows that the University of Nova Gorica is the best university based on most evaluation factors. It not only exceeds other Slovenian universities but also older and bigger universities in our neighborhood.

“We are entering the new academic year with optimism, steadfast in our mission, bound to fulfill international university norms and with a responsible stance towards our students and the society as such. We are convinced that we are simply the best and that we can do so much more,” the Rector concluded his speech.

In the name of the University as a whole, Prof. Dr. Danilo Zavrtanik thanked the Mayor of the Vipava municipality Ivan Princes, MSc the municipality



Honorary doctor of the University of Nova Gorica – doctor honoris causa – Prof. Dr. Igor D. Gregorič.



Professor emeritus of the University of Nova Gorica, Prof. Dr. Boštjan Žekš.



Awardees and administration of the University of Nova Gorica.

councillors and the inhabitants of Vipava for a wise decision and a warm welcome.

At the ceremony, the Rector of the University of Nova Gorica, prof. dr. Danilo Zavrtanik, presented different awards, namely, the doctor honoris causa of the University of Nova Gorica, the title of professor emeritus of the University of Nova Gorica, the honorary member of the University of Nova Gorica and the golden plate of the University of Nova Gorica. The Vice-rector for Education, Prof. Dr. Mladen Franko presented student awards, alumnus primus and alumnus optimus, and the member of the management board of the University of Nova Gorica Foundation, Prof. Dr. Guido Bratina presented the bronze donator of the University of Nova Gorica award.

At its session on 15 March 2017, the Senate of the University of Nova Gorica made the decision to award the title of an honorary doctor of the University of Nova Gorica – doctor honoris causa – to

Prof. Dr. Igor D. Gregorič for extraordinary scientific and professional achievements in the field of cardiology.

At its session on 5 July 2017, the Senate of the University of Nova Gorica reached the decision to award the title of professor emeritus of the University of Nova Gorica to Prof. Dr. Boštjan Žekš for setting excellency standards for pedagogical and scientific activities at the University of Nova Gorica.

At its session on 10 May 2017, the Senate of the University of Nova Gorica reached the decision to grant Prof. Dr. Paolo Samorì the honorary member of the University of Nova Gorica award for his contribution to the development of scientific excellence at the University of Nova Gorica in the field of organic electronics.

At its session on 23 March 2017, the Governing Board of the University of Nova Gorica reached a decision to award the golden plate of the University

of Nova Gorica to Mitja Jermol, MSc for important contribution towards the development of material opportunities for the University of Nova Gorica.

The alumnus primus award is granted to a graduate of the first and second level study programme who progressed regularly during studies and was the first of his or her generation of enrolled students to graduate. The alumnus optimus award is granted to the graduate of the first and second level study programme whose average grade in each study year was the highest of all the graduates. The awards were given to the graduates of the School of Engineering and Management, School of Environmental Sciences, School of Humanities, School of Science, and School for Viticulture and Enology.

The title bronze donor of the University of Nova Gorica Foundation received Mr. Fedor Tomažič. In 2016, Mr. Fedor Tomažič donated a Florentine frame and a Venetian chandelier to the University of Nova Gorica Foundation.



Honorary member of the University of Nova Gorica, Prof. Dr. Paolo Samorì.



Golden plate of the University of Nova Gorica, Mitja Jermol, MSc.



Bronze donor of the University of Nova Gorica Foundation, Mr. Fedor Tomažič.



Organizing of Symposia, Conferences, Roundtables, Conventions and (Summer) Schools

Mediterranean Imaginaries: Literature, Arts, and Culture – MedIM

26 March - 6 April 2017, Malta

Participants have explored and studied Mediterranean literature, film, and a large array of texts from different periods engaging with the cultural encounters, clashes, and exchanges of the region. They have scrutinized how these, in turn, affect national and regional literatures through a research network that operates at transnational level, sharing and confronting ideas, practices, and study methods.



International symposium “From Isonzo to Visegrad: the Great War from a Central European perspective”

25 April 2017, Kromberk Castle, Nova Gorica

The School of Humanities in collaboration with the Honorary Consulate of the Republic of Poland in Nova Gorica, the Embassy of the Czech Republic, the Embassy of Hungary, the Embassy of the Slovak Republic, the Municipality of Nova Gorica, and the Scientific Research Centre of the Slovenian Academy of Sciences and Arts has organized the international symposium *From Isonzo to Visegrad: the Great War from a Central European perspective*. The symposium facilitated the exchange of approaches and ideas regarding the historical experience of different nations in the first world war, the memories of the soldiers from the Isonzo Front, the refugees, and on the places commemorating these historical events.



1st International VITI-OENO day of University of Nova Gorica (Slovene-French Oenology Day)

23 May 2017, Lanthieri Mansion, Vipava

In May 2017, Wine Research Centre and School for Viticulture and Enology organised the first International VITI-OENO day of University of Nova Gorica (IVED 2017), which was held in Lanthieri Mansion in Vipava. The first in a series of regularly planned editions of IVED symposiums, with the working subtitle "Slovene-French Oenological Day" devoted special emphasis to the building up the partnership of Slovenia with France. On a full day event, we invited world-renowned French researchers from Universities in Bordeaux and Montpellier as partner lecturers. Slovenian experts (NIB, KIS, UNG) also participated in the symposium with their expert and scientific contributions. About 120 scientists, experts, consultants, producers and students attended the symposium, mainly from Slovenia, but also from abroad.



Exhibition of videos in virtual architecture (Aleš Vaupotič et al.)

Round table Literary scholarship and digital humanities

23 May 2017, Ljubljana

At the round table discussion Literary scholarship and digital humanities, which has taken place at the Scientific Research Centre of the Slovenian Academy of Sciences and Arts in Ljubljana, invited Prof. Dr. Katja Mihurko Poniž, Prof. Dr. Aleš Vaupotič, Prof. Dr. Miran Hladnik, Prof. Dr. Marko Juvan and Assist. Prof. Dr. Matija Ogrin to discuss the dilemmas of the discipline: the advantages of digitization of textual sources, electronic critical editions, database building and use in literary history, information visualization, and about the opportunities and possible misunderstandings in establishing joint research with other disciplines, primarily with the information science and the theory of new media.

Researchers' Night 2017 – Science for Life

29 September 2017, Nova Gorica

The Researchers' Night in Slovenia in 2017 was organized under the slogan Science for Life by a consortium of five partners, including the University of Nova Gorica. The main event of the project was the Researchers' Night that took place in six towns across Slovenia on 29 September 2017. This was an opportunity for the research institutions to showcase our work and mission to the public, especially to young people. For this purpose, LELS led a round table Science is cool! on which the moderator talked with young as well as senior researchers at UNG. Within the project, UNG have also organized a public contest for all elementary and high schools in Slovenia to select the best photograph, movie or poetry on the subject of science. The award ceremony was held on the evening event in Kulturni dom (Centre of Culture) in Nova Gorica.



European Researchers' Night 2017, round table *Science is cool!* at UNG in Rožna Dolina.



The Intelligentsia from Gorica Region in History

5 October 2017, Nova Gorica

Alongside the celebration of the 70th anniversary of the city of Nova Gorica, the city which gave our university its name, the School of Humanities organized a symposium *The Intelligentsia from Gorica Region in History*. The faculty of the Cultural History programme of the School was invited to participate the event, alongside other specialist in this field, which is of major importance for the environment hosting our University. The twelve presentations were divided into four sections: the Educated bourgeoisie, the Opinion-makers, the Patriots from the Land, and the Sons and Daughters of the Land.



Discussing the problem of Dissidents in Slovenia and in Croatia

6 Oktober 2017, Lanthieri Mansion, Vipava

In collaboration with the Croatian Institute of History from Zagreb, the School of Humanities organized a colloquium on the issue of dissident activity in Slovenia and in Croatia. This traditional meeting, which takes place annually since 2015, took place in October in Vipava. The most recent discoveries on the dissidents were presented. The recordings of the colloquium are available on the History of Slovenia portal Sistory (<http://www.sistory.si/11686/38097>).

Škrabčevi dnevi 10

13 October 2017, Nova Gorica

On October 13, 2017, the University of Nova Gorica and the Research Center of the Slovenian Academy of Sciences and Arts co-hosted *Škrabčevi dnevi 10*. Following the example of the conferences organized by the national linguistic associations in Germany, Canada or the USA, the *Škrabčevi dnevi* linguistics conference series imposes no restrictions with respect to the subdiscipline, topic, investigated language, framework or methodology of the reported research, and thus tries to fill the gap left in Slovenia by other linguistic conferences all of which impose some such restriction or other. The 17 talks of the *Škrabčevi dnevi 10* showcased the latest findings on syntactic, morphological, semantic and lexicographic questions arising in the study of Slovenian, the Slovenian sign language and other languages.

**International literary conference “Teaching Women Writers: exploring NEWW VRE possibilities”**

16 November 2017, Ljubljana

The conference has explored the possibilities offered by the virtual research environment New Women Writers (NEWW VRE). It was developed in the framework of the HERA project *Traveling Texts 1790-1914: The Transnational Reception Of Women’s Writing At the Fringes of Europe (TTT)* in the last four years as the next stage of development founded on the Women Writes database. Following the conclusion of the HERA TTT project the network of researchers that enabled the NEWW VRE became a DARIAH working group.

Formal Description of Slavic Languages 12.5

7 December - 9 December 2017, Nova Gorica

Between December 7 and 9, 2017, we hosted the international conference *Formal Description of Slavic Languages (FDSL) 12.5*. After the first one in 1995, meetings from the FDSL series had first taken place biannually, with the organization first switching between the University of Leipzig and the University of Potsdam, and then expanding to also include, as host universities, the University of Goettingen and Humboldt University, Berlin. Starting with FDSL 6.5, which was hosted in 2006 by the University of Nova Gorica, the conference grew into an annual event, no longer limited strictly to German universities. The 32 talks and poster presentations at FDSL 12.5 saw linguists from 17 countries—from Japan, Europe, and the USA—present their latest formal-linguistic discoveries about Slavic languages.



○ APRIL

University of Nova Gorica best university in Slovenia, in 186th place in RUR (Round University Ranking)

The latest international Round University Ranking system (RUR) considers the University of Nova Gorica best university in Slovenia and ranks it among the leading world universities.

According to the results of the international Round University Ranking system (RUR), performing evaluations and rankings of leading world universities, the University of Nova Gorica in 2017 was ranked in the excellent 186th place, improved last year's result (203th place in 2016), and thus ranked among the elite group of world's most renowned universities. Among the latter the most highly esteemed U.S. and British universities prevail, such as the California Institute of Technology, Stanford University, Harvard University, the University of Oxford, the University of Cambridge etc.

In the area of the quality of teaching, the University of Nova Gorica was ranked in an even higher, excellent 89th place, also due to the extremely favourable student-professor ratio of 1:4.

The results of RUR show that in terms of all quality assurance indicators the University of Nova Gorica holds a remarkably strong lead over the rest of the universities in Slovenia. Up to date no other Slovenian university has been ranked so high on any of the internationally recognised world universities rankings. Moreover, it performed better than older and larger universities in Slovenia's cross-border area, for example Italy's University of Trieste, University of Padua, University Ca' Foscari of Venice (<http://roundranking.com/world-map.html>).

RUR measures the performance of the leading world universities on an annual basis by universities' overall results achieved across four key missions: teaching, research, international diversity and financial sustainability. Detailed UNG RUR-ranking results by individual categories for years 2016 and 2017 are attached.

RUR rankings are based on the data on world universities collected by Thomson Reuters, as part of the Global Institutional Profiles Project.

Thomson Reuters' assessment of universities is based on data obtained from three main sources: data on the institution's publications and citations from Thomson Reuters Web of Science®; the results of the annual Academic Reputation Survey and the data provided by the institution directly to Thomson Reuters. A database is thus formed on the institution's scientific and teaching performance, its sources of financing and the characteristics of its students and staff.

On the basis of the data obtained RUR's analysis is performed, considering 20 indicators of quality performance in the previously mentioned four key mission areas. The major part of the assessment is represented by the indicators in the area of research (40%) and teaching (40%). All indicators take into account the size of the institution. Consequently, small and large universities can equally be compared in terms of their performance.

Despite its short tradition (celebrating its 20th anniversary in 2015) and a relatively small size, the University of Nova Gorica excels on an international scale. Its excellence has also been recognised in the U-Multirank 2015, 2016 and 2017 comparative world university rankings and can by no means be considered as a coincidence but rather represents the results of hard work and the clearly defined mission of the development of the University of Nova Gorica. The University's scientific excellence was also identified and emphasized in the "European Commission's report on the Scientific Output and Collaboration of European Universities in the period from 2007 to 2011", stating that according to the criteria of scientific excellence and the scientific impact of its publications, The University of Nova Gorica is ranked among five best universities in Europe, including the University of Oxford, the University of Cambridge, the École Polytechnique Fédérale de Lausanne (EPFL) and the ETH Zürich.

Such university rankings represent a valuable source of information for prospective students deciding at which university to study, since the quality of studies and study programmes ensuring high employment prospects are of key importance. The rankings can also serve to employers, providing them with the information which universities provide the most highly qualified young professionals.

AUGUST

High impact on future research directions also by our investigations in the field of photothermal spectroscopy

The letter "Optimized frequency dependent photothermal beam deflection spectroscopy", published by the co-workers of Laboratory for Environmental and Life Sciences Prof. Dr. Dorota Korte and Prof. Dr. Mladen Franko with co-authors in *Laser Physics Letters*, was chosen by the publisher in his Editorial "Highlights of 2016", as one of the three contributions with most impact in the field of Laser spectroscopy.

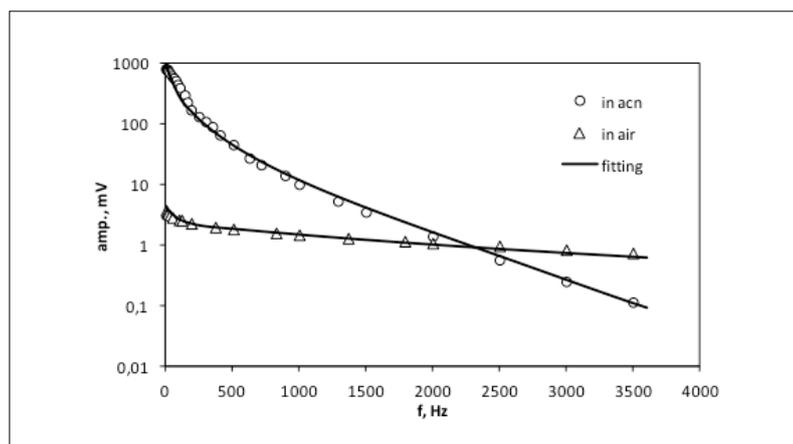
In the Editorial of the Vol. 14, No 8 of *Laser Physics Letters* the publisher underlines tremendous developments in laser technology and light sources over recent years that are pushing forward the frontiers of science. New applications across physics, biomedicine and industry are thriving due to technological progress. As a journal that presents the latest innovative research on advances in laser science, *Laser Physics Letters* supports progress in the discipline. In the Highlights of 2016 a selection of the top content published in volume 13 of the journal is showcased with a look forward to the next significant breakthrough.

In recognition of the high quality of articles, a selection of some of the most popular articles published by *Laser Physics Letters* throughout 2016 is presented, all of which are believed to have the potential to make a high impact on future research directions. Those chosen are recognised for their high-interest with readers and importance in the field.

Among the three highlighted contributions in the subject area of Laser spectroscopy we also find *Optimized frequency dependent photothermal beam deflection spectroscopy* by Prof. Dr. Dorota Korte and Prof. Dr. Mladen Franko with co-authors.

In the letter the optimization of the experimental setup for photothermal beam deflection spectroscopy (PBDS) is performed by analysing the influence of its geometrical parameters (detector and sample position, probe beam radius and its waist position etc.) on the detected signal. The analysis was performed by using the theoretical description based on the complex geometrical optics which we developed recently. Our research demonstrates, that it is a complex problem to choose the proper geometrical configuration as well as sensing fluid to enhance the sensitivity of the PBDS technique. Up to 100-times signal enhancement was observed at low modulation frequencies by placing the sample in acetonitrile, while at high modulation frequencies the sensitivity is higher for measurements made in air. The examined sample was a recently developed CuFeInTe_3 superparamagnetic semiconductor material, which is of interest also as thermoelectric material for heat pumping and power generating devices. The optimized PBDS enabled the first determination of CuFeInTe_3 thermal properties such as thermal diffusivity and thermal conductivity. Determination of thermal conductivity in thermoelectric materials is particularly important because it is related to the thermoelectric figure of merit of the material. On the other hand, thermal diffusivity is related to the charge carrier density and is being currently investigated by PBDS in advanced materials such as topological insulators.

Link to the article: "<http://iopscience.iop.org/article/10.1088/1612-2011/13/12/125701>"



Dependence of the amplitude of BDS signal on modulation frequency for CuFeInTe_3 sample in acetonitrile and air.

SEPTEMBER

Ultra-high-energy cosmic particles originate beyond our galaxy

On 22 September, the scientists of the international Pierre Auger Collaboration published their research findings showing that cosmic particles with a million times higher energies than the energy of proton in the large hadron collider originate outside of our galaxy. The results were published in the prestigious scientific journal *Science*. The research team included Slovene researchers from the University of Nova Gorica and the Jožef Stefan Institute.

These revolutionary results answer the question of how and where the ultra-high-energy cosmic particles originate – within our galaxy or beyond it – which has been open for more than 50 years. One of the most probable places of origins are active galactic cores – centres of galaxies with black holes that consume the surrounding matter. The paper published in the *Science Journal* is based on more than ten years of measurements with the largest cosmic particle detector in the world, the Pierre Auger Observatory in Argentina. According to the current spokesperson of Collaboration, prof. Karl-Heinz Kampert from the University of Wuppertal, “we are now much closer to understanding the long-unsolved riddle of where and how the ultra-high-energy cosmic particles are created. Our measurements offer an unequivocal proof that they originate outside of our galaxy.”

The international Pierre Auger Collaboration includes more than 400 scientists, engineers, and technicians from 18 countries. The Slovene research group has been an active member ever since the conceptual design of the Pierre Auger Observatory, starting in 1994, James Cronin, Nobel Prize in Physics winner, professor emeritus at the University of Chicago and honorary doctor at the University of Nova Gorica, invited prof. dr. Danilo Zavrtanik to join the project. The observatory foundation stone was laid on 17 March 1999 in the Argentine province of Mendoza and the observatory has been measuring the characteristics of ultra-high-energy cosmic particles since January 2004, without interruption. The Pierre Auger Collaboration is a true international partnership, as none of the collaborating countries contributed a majority

share for the construction of observatory, which cost 54 million American dollars in total, or its continued operation. The Slovene group collaborated on research tasks and for several years, the group leader, prof. dr. Danilo Zavrtanik, was also chair of the Collaboration’s Committee. Other member of the Slovene group in the Pierre Auger Collaboration are prof. dr. Samo Stanič, doc. dr. Sergey Vorobyev, doc. dr. Lili Yang, dr. Ahmed Saleh, and young researchers Gašper Kukec Mezek and Marta Trini from the University of Nova Gorica, and prof. dr. Andrej Filipič and prof. dr. Marko Zavrtanik from the Jožef Stefan Institute in Ljubljana. The research of the Slovene group is financially supported by the Slovenian Research Agency.

Ultra-high-energy cosmic particles are protons and atomic nuclei of different elements, from helium to iron, which travel through cosmic distances almost at the speed of light. They are very rare – Earth is hit on average by only one such particle per square kilometre per century – which means that a very large detector is needed to study their characteristics and origins. The Pierre Auger Observatory measured the characteristics of ultra-high-energy cosmic particles by measuring the cascades of charged particles occurring during collisions with atomic nuclei of atmospheric gases in 45,000 cubic kilometres of the Earth’s atmosphere above it. The detector system consists of a network of 1,660 ground detectors covering the surface of 3,000 square kilometres and 24 specialised telescopes for measurements of weak fluorescent light caused by the cascades. The combination of telescopes for fluorescent-light measurements and the detectors which detect the cascade particles when they hit the ground was first used by the Pierre Auger Observatory and has turned out to be very effective, as can determine the incoming direction of the ultra-high-energy cosmic particles with great precision, to less than one angular degree.

The analysis of incoming directions of more than 30,000 cosmic particles measured so far, showed that there is around 6% surplus from the direction of a relatively large part of the sky with high concentration of nearby galaxies and 120° away from the centre of our galaxy. This shows that these ultra-high-energy particles do not originate in our galaxy, but beyond it. So far, the measurements cannot be used to identify the exact point of origin, as the trajectory of high-energy particles bends in the magnetic field of our galaxy, meaning their actual location of origin does not match the measured one. A new, more precise study is planned, using even higher energies and focusing on only one type of cosmic particles, namely protons, which are the least susceptible to the influences of the magnetic field. This study will be made possible with the upgrade of the Pierre Auger Observatory, which will be finished in 2018. “The upgraded observatory will open up new opportunities for cutting-edge research and international experiences, also for Slovene students of physics and astrophysics at the University of Nova Gorica,” says prof. dr. Danilo Zavrtanik



Slovenian Pierre Auger team on Sep. 14, 2017. From left to right: Prof. Dr. Danilo Zavrtanik, Doc. Dr. Lili Yang, Dr. Ahmed Saleh, Marta Trini, Gašper Kukec Mezek, Doc. Dr. Sergey Vorobyev, Prof. Dr. Andrej Filipič, Prof. Dr. Marko Zavrtanik and Prof. Dr. Samo Stanič.

OCTOBER

Important discovery in gravitational astronomy

On 16 October, the scientists of the LIGO and Virgo collaborations and around 70 observatories around the world, including Slovene researchers, published an important finding in the field of gravitational waves.

After the gravitational waves were first detected two years ago with the LIGO Observatory, who received this year's Nobel prize for physics, three similar event were observed, all of which were the result of black hole fusions in deep space, more than a billion light years away from Earth.

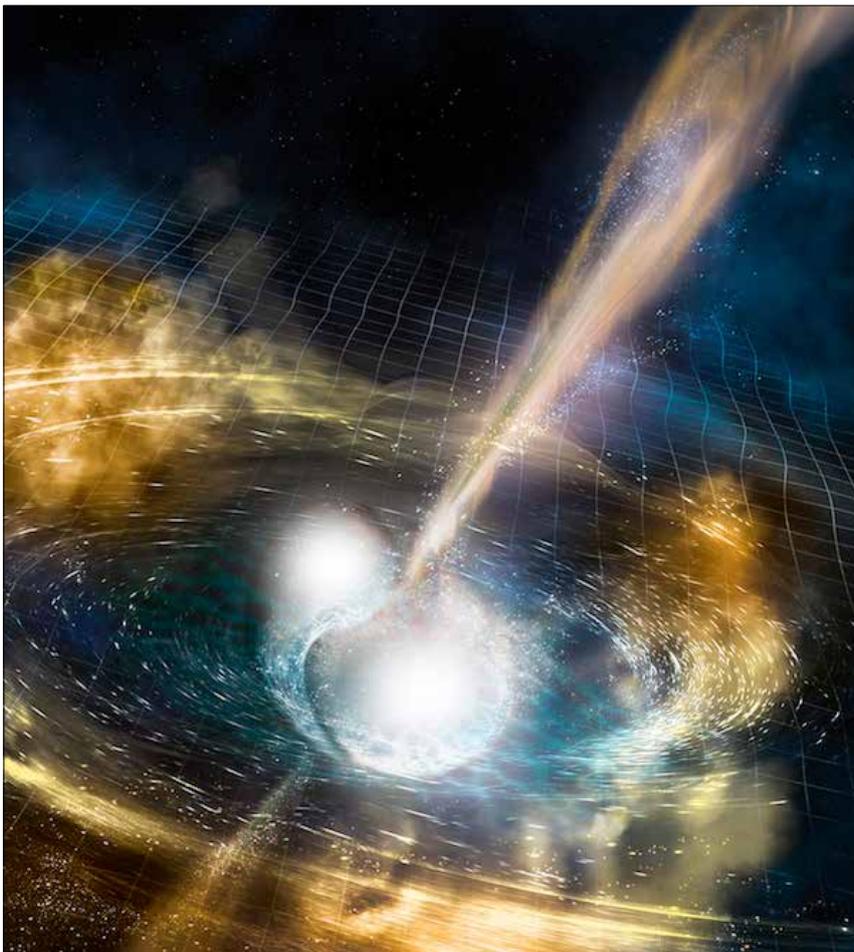
Then, on 17 August 2017, at 14:41:04 CEST, the LIGO and Virgo observatories first detected gravitational waves resulting from fusion of two neutron stars.

In addition, the Fermi satellite detected a flash of gamma light in the same part of the sky with a 1.7-second delay, and a few hours later, the telescopes on Earth detected visible light. These observations allowed the scientists to determine the exact point of origin. They found that the fusion of neutron stars happened in the NGC 4993 galaxy, a "mere" 130 billion light years away.

This is an important scientific breakthrough, not only because this is the first detection of gravitational waves caused by fusion of neutron stars and the first event of gravitational waves with known place of creation, but also because of the variety and number of observatories collaboration on their detection: this is the first event observed with gravitational waves detectors, satellites and telescopes for detection of different lights and with special detectors of cosmic particles.

Among the thousands of researchers collaborating on the intensive research of this event were Slovene scientists: associates of the University of Nova Gorica, the Jožef Stefan Institute, the National Institute of Chemistry and the University of Ljubljana who work with the Pierre Auger Observatory in Argentina (Andrej Filipčič, Gašper Kukec Mezek, Ahmed Saleh, Samo Stanič, Marta Trini, Sergei Vorobiov, Lili Yang, Danilo Zavrtanik, Marko Zavrtanik), participate in the Fermi satellite mission (Gabrijela Zaharijaš) and do research as part of the GRAWITA project using the Very Large Telescope of the European Southern Observatory in Chile (Andreja Gomboc, Drejc Kopač).

The results were published in The Astrophysical Journal Letters and in Nature Astronomy.



Scientific background:

For several decades, the fusion of neutron stars has been considered as the most probable theoretical model for creation of the so-called short gamma-ray bursts, which are one of the most energetic explosions in space. The latest observations of the gravity wave signals and the light that follows them finally resulted in direct proof of these models, which also has wider implication for the entire field of astrophysics.

Different types of observatories complement each other's observations of space to create a more comprehensive picture of different phenomena. In case of the neutron stars fusion, the observatories help us find answers to many questions: from the creation of explosion and its effect on the wider galactic surroundings to the research of the fusion itself and the behaviour of matter and physical law in ultra-high densities inside the neutron stars which cannot be recreated in the laboratories on Earth.

The great importance of direct detection of gravitational waves, which confirmed the prediction Einstein made a hundred years ago and opened a new window into space, was also validated by this year's Nobel Prize for Physics, which went to the LIGO project leaders.

NOVEMBER

Slovenia becomes a shareholder of the Cherenkov Telescope Array Observatory (CTAO) for observation of high-energy cosmic gamma rays

At its regular meeting on 14 November 2017, the Council of the Cherenkov Telescope Array Observatory (CTAO), responsible for construction and operation of the observatory for cosmic high-energy gamma-ray observation, adopted Slovenia as one of its shareholder countries.

At the same meeting, Australia was also adopted as a CTAO shareholder country. The key actors in the process of Slovene integration in the CTAO were the Ministry of Education, Science and Sport and the University of Nova Gorica. The latter will also represent Slovenia in the CTAO bodies.

The researchers of the Centre for Astrophysics and Cosmology at the University of Nova Gorica and the Experimental Particle Physics Department at the Jožef Stefan Institute (Christopher Eckner, Prof. Dr. Andrej Filipič, Gašper Kukec Mezek, Prof. Dr. Samo Stanič, Doc. Dr. Sergey Vorobyev, Doc. Dr. Gabrijela Zaharijaš, Doc. Dr. Lili Yang, Prof. Dr. Danilo Zavrtanik, Prof. Dr. Marko Zavrtanik, and Lukas Zehrer) have been collaborating on design and planning of the new gamma-astronomy observatory called the Cherenkov Telescope Array (CTA) with more than 1350 researchers from 32 countries since 2010 and the formal membership of Slovenia in the CTAO allows them to participate in construction and later use of the new observatory.

The amazing scientific potential of the CTA observatory will be published in the upcoming weeks in a book format as a special edition of the International Journal of Modern Physics D. Detailed and systematic research of the far-away universe using cosmic gamma rays with energies between 20 GeV and 300 TeV (for comparison, the highest energy of particles in the CERN large hadron collider is 8 TeV) will greatly contribute to our understanding of mechanism of origins of gamma rays and cosmic particles with extreme energies near black holes, and to our search for dark matter and as-of-yet unknown forms of matter.

The CTA observatory will consist of two parts: the northern part will be built in La Palma (Canary Islands, Spain) and the southern part in Paranal (Atacama Desert, Chile). The CTA observatory on La Palma will be built at an altitude of around 2200 m, where the observation conditions are practically ideal all year round, without any pollution or turbulences. The CTA observatory in Chile will be constructed near the European Southern Observatory (ESO), where it will also have ideal observation conditions as well as the option of using the existing ESO infrastructure. Each of the CTA observatories will include an array of a few hundred Cherenkov telescopes for detection of weak and very short (a few nanoseconds long) flashes of Cherenkov light released during atmospheric cascades of secondary particles, which form during interactions of cosmic high-energy gamma ray with atomic nuclei of atmospheric gases. The light flashes are observed with the wide arrays of sampling Cherenkov telescopes, which use a system of mirrors to collect the Cherenkov light and project it on the surface of the camera inside each telescope. The five-year observatory construction period began in 2017. The Slovene group, together with their associates from Italy, is collaborating on the development of semiconductor light detectors for Cherenkov telescopes. In the Slovene labs, they will work on research and development of detector circuits and thus contribute to the construction of the observatory.

The stakeholder countries of the CTA scientific consortium are: Argentina, Armenia, Australia, Austria, Brazil, Bulgaria, Canada, Chile, Croatia, Czech Republic, Finland, France, Germany, Greece, India, Ireland, Italy, Japan, Mexico, Namibia, Netherlands, Norway, Poland, Slovenia, Spain, South Africa, Sweden, Switzerland, Thailand, Ukraine, United Kingdom, and the USA.

So far, the shareholders of the CTAO are: Australia, Austria, Czech Republic, France, Germany, Italy, Japan, Slovenia, Spain, Switzerland, and United Kingdom.



6-10 November 2017, Teatro Circo de Marte, Santa Cruz de La Palma, Spain.

DECEMBER

The researchers at the University of Nova Gorica participated in two breakthrough achievements in Physics in 2017

Every year, the scientific magazine Physics World, one of the key journals in the field of physics, covering all the areas of physics, issues a list of "Top 10 breakthroughs in Physics".

In the list of top 10 breakthroughs of 2017, which range from topological physics to Egyptology, the first place went to the international team of astronomers and astrophysicists who ushered us into a new era of astronomy by making the first ever multi-messenger observation involving gravitational waves.

The Pierre Auger Observatory took the sixth place by showing that ultra-high-energy cosmic rays come from outside the Milky Way and are therefore of extragalactic origin.

Researchers from the Center for Astrophysics and Cosmology at the University of Nova Gorica participated in both of these two discoveries: Andrej Filipčič, Gašper Kukec Mezek, Ahmed Saleh, Samo Stanič, Marta Trini, Serguei Vorobiov, Lili Yang, Gabrijela Zaharijaš, Danilo Zavrtnik, Marko Zavrtnik and Andreja Gomboc at the first discovery.

The placing of two achievements (that included the participation of the UNG's researchers) on this prestigious list is one of the most important accomplishments of Slovenian physicists in the year 2017.

DECEMBER

A list of ten most prominent articles in 2017

A list of ten most prominent articles published by the faculty members of the University of Nova Gorica in journals with the highest Impact factor.

Number	Journal	Authors, University of Nova Gorica members	The Impact Factor
1	SCIENCE	Andrej Filipčič, Gašper Kukec Mezek, Ahmed Saleh, Samo Stanič, Marta Trini, Serguei Vorobiov, Lili Yang, Danilo Zavrtnik, Marko Zavrtnik	37,205
2	ADVANCED MATERIALS	Egon Pavlica, Gvido Bratina	19,791
3	ADVANCED ENERGY MATERIALS	Nataša Zabukovec Logar	16,721
4	JOURNAL OF THE AMERICAN CHEMICAL SOCIETY	Iztok Arčon	13,858
5	PHYSICAL REVIEW X	Primož Rebernik Ribič, Giovanni De Ninno	12,789
6	PHYSICAL REVIEW X	Giovanni De Ninno, Primož Rebernik Ribič	12,789
7	NATURE COMMUNICATIONS	Primož Rebernik Ribič, Barbara Ressel, Matija Stupar, Giovanni De Ninno	12,124
8	PHYSICAL REVIEW LETTERS	Gabrijela Zaharijas	8,462
9	PHYSICAL REVIEW LETTERS	Samo Stanič	8,462
10	PHYSICAL REVIEW LETTERS	Giovanni De Ninno	8,462



Research Activity

In 2017, the research work at the University of Nova Gorica was organized at four research laboratories and six research centers. Those were: Laboratory for Environmental and Life Sciences, Laboratory of Organic Matter Physics, Materials Research Laboratory, Laboratory of Quantum Optics, Center for Astrophysics and Cosmology, Center for Atmospheric Research, Center for Information Technologies and Applied Mathematics, Research Centre for Humanities, Wine Research Centre, Centre for Cognitive Science of Language



Laboratory for Environmental and Life Sciences

(Head: Prof. Dr. Mladen Franko)



Antifogging thin film on window: less active left, more active right, no coating in the middle.

The Laboratory for Environmental and Life Sciences (LELS) enables intensive collaboration of ecologists, ecotoxicologists, biochemists, molecular biologists, analytical chemists, environmental chemists and technologists. Investigations conducted at LELS include development of novel and unique ultrasensitive laser-based analytical methods, study of the fate, transport and transformations of pollutants in terrestrial and aquatic environments, biomedical diagnostic tools, as well as identification of recombinant antibodies specific for cell tumor biomarkers. Cutting edge research at LELS enables new insights into environmental processes at the level of molecules, cells, organisms and ecosystems, their interactions and interrelation with life processes in organisms and human body, including cellular antioxidant activity, antimicrobial activities, biological processes regulating the virus trafficking, cancer diagnostics and therapy.

Research activity

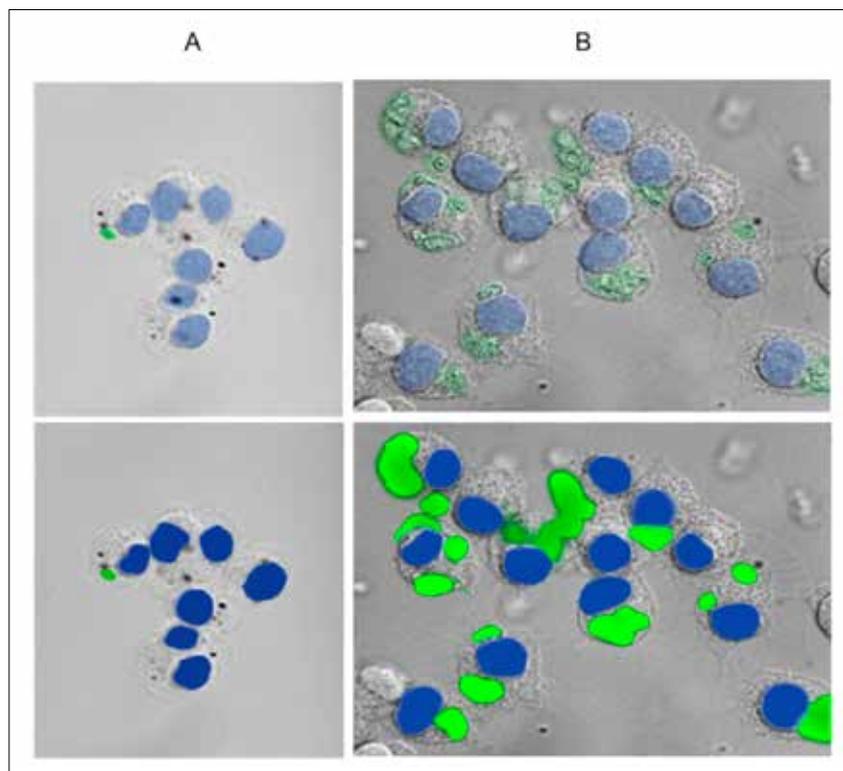
Photocatalytic studies were performed within two research projects: Thermo- and photo-active coatings for windows and Development of advanced TiO_2 -based photocatalyst for the degradation of organic pollutants in wastewater. In the former one we continued with development of self-cleaning and antifogging TiO_2 - ZrO_2 - SiO_2 thin films for windows. Coated sample windows (30 cm x 30 cm size, M SORA) were exposed at three locations in Slovenia, enabling regular monitoring of transmittance, haze and color coordinates changes of the films under real weather conditions. In parallel, laboratory measurements of activity, mechanical resistance, thermal conductivity were carried out on smaller samples. Within the second project we made detailed structural studies of Zr and Cu modified P25 TiO_2 photocatalyst to understand their impact in degradation efficiency of aqueous contaminants. Low Cu loading (0.05 mol%) increased activity of P25, while higher Cu loadings had negative effect. We also proved that co-addition of Zr increases photocatalytic efficiency.

We finished the testing of materials with different adsorptive ability (limestone, expanded clay, Filtralite®) to bind pollutants and to evaluate the bioremediation potential with conditioned inoculum from an aeration tank from a municipal wastewater treatment plant. We continued with monitoring the seasonal dynamics of chemical pollutants in various rivers and karstic percolating waters.

In the field of biotechnology, we isolated a set of nanobodies highly selective for the toxic species *A. minutum* and able to discriminate between different strains characterized by variable toxicity. We also succeed in the first panning directly on extracellular vesicles, which yielded several nanobody clones selective for different antigens. The protocol has been validated and progressively improved. The optimization of the nanobodies recovered from the different panning has been performed in collaboration with SISSA and enabled to characterize the factors influencing the macromolecule stability and binding capacity. Finally, we contributed to a multi-center project for the characterization of biochemical biomarkers useful to monitor the drought stress of forest plant seedlings.

We continued the research of environmental aerosols and their effect on physiological parameters of human cells. We showed that aerosols from Ajdovščina and Tuzla area (BiH) cause higher level of genotoxicity and trigger different mechanisms of immune response in the exposed macrophages. Similarly, we evaluated samples of surface water from Tuzla containing heavy metals.

In the field of ultrasensitive laser-based analytical techniques thermal lens spectrometry (TLS) was applied as detector in flow injection analysis (FIA) for determination of biologically active compounds. FIA-TLS enabled sensitive determination of enzyme acetylcholinesterase (AChE) - a potential biomarker of neurodegenerative disorders. The limits of detection (LOD) achieved by injecting 20 μ L of human plasma were 9.4 mU of AChE/mL. For antioxidant malvidine-3-glucoside the achieved LOD (4 μ g/L) is 10 times lower compared to LOD offered by DAD detection in liquid chromatography (HPLC).



Macrophages in phagocytosis after the exposure to black carbon.

By exploiting TLS microscopy (TLM) for detection in microfluidic FIA systems and by injecting only 3 μ L samples, we enabled determination of iron species in cloud water with different levels of pollution. The achieved LODs (0.04 μ mol/L for Fe(II) and 0.02 μ mol/L for Fe(III)) are 7 times lower compared to spectrophotometry, despite 100 times shorter optical pathlength in μ FIA.

TLS detection in HPLC enabled determination of different forms of pyoverdine (a fluorescent pigment from *Pseudomonas* bacteria) and Fe(III)-pyoverdine complexes in synthetic cloud water (LOD = 1,7 μ g/L). Besides the improved LOD for Fe(III)-pyoverdine, compared to DAD detection, the developed method enables simultaneous determination of the complex and free pyoverdine. This is not possible by spectrofluorimetry, since Fe(III)-pyoverdine is not fluorescing.

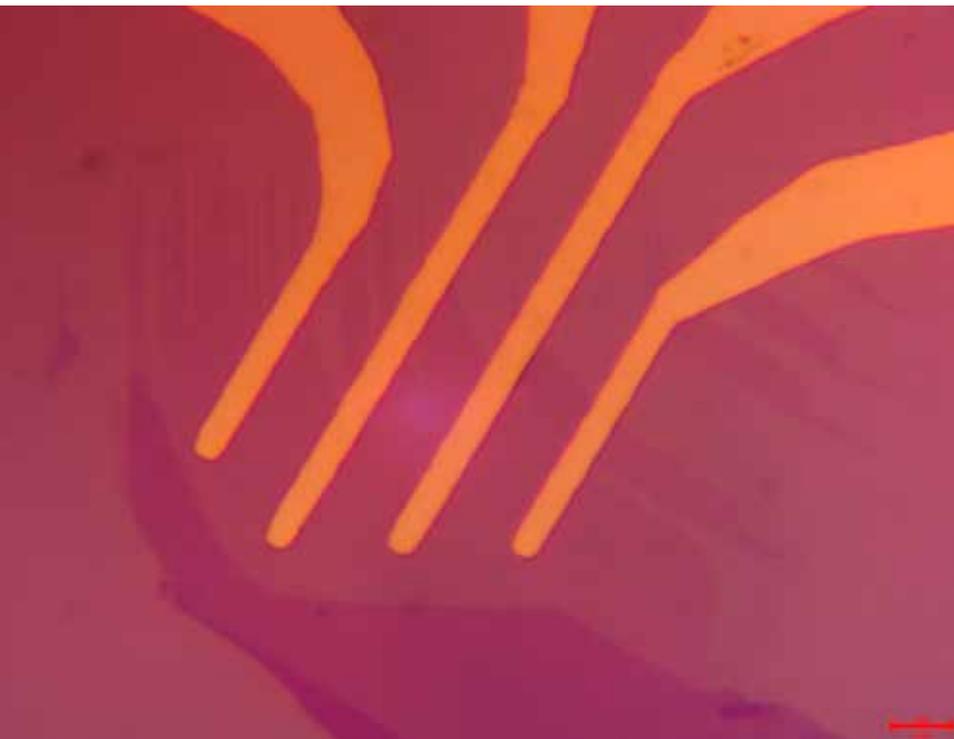
A photothermal beam deflection method was also developed for determination of thermal conductivity and diffusivity of thin nanostructured layers of porous silicon on the surface of thermoelectric materials.

Laboratory of Organic Matter Physics

(Head: Prof. Dr. Guido Bratina)

The Laboratory for organic matter physics has been active in the year of 2017 in the area of photosensors, studies of mobility in thin layers of organic semiconductor blends with graphene and coranulene. Special attention was devoted to mastering mechanical exfoliation of large graphene flakes and subsequently fabrication of all-graphene transistors. Towards the end of the year the first graphene transistor was successfully put to operation. We continued fruitful collaboration with the University of Strassbourg, France, and IMEC, Leuven Belgium. We were successful with the research proposal in the new Flag-ERA call, where we are coordinating a consortium of four research groups from France, Belgium and Germany.

The integration of organic crystals into photovoltaic devices represents a powerful strategy to investigate exciton and charge transport in ordered organic semiconductors, and it represents a promising approach toward high-performance and cost-effective photoelectrical conversion on flexible substrates. Organic semiconductor, due to their excellent interaction with light, could be made into photosensors. We have been working together with colleagues from University of Strasbourg and CNR Bologna on novel forms of photonic devices. In these, crystalline organic semiconductor (OS) microplates were integrated into a vertical-yet-open asymmetrical heterojunction for the realization of a high-performance organic photovoltaic detector (nanomesh scaffold), which showed less than 100ns photoresponse, ultrahigh signal-to-noise ratio of 10^7 , and high sensitivity to weak light. The work of Laboratory for organic matter physics (LOMP) was devoted to electro-optical characterization of fast transient photocurrent responses of these novel photodetectors. The results were published in *Advanced Materials*. These results have demonstrated that nanomesh scaffold is a powerful device platform to realize photoelectrical conversion in organic semiconducting nanowires regardless of their conformity. In principle, such approach is also applicable to all combinations of p-n organic semiconductors as long as they are processed using orthogonal solvents. In the future, many different kinds of organic crystalline nanowires with high absorption coefficient, long exciton diffusion length, the possibility to be processed in orthogonal solvents, as well as other desirable properties like singlet fission could also be incorporated into photovoltaic devices by the aid of nanomesh scaffold to make full use of their outstanding optoelectronic properties.

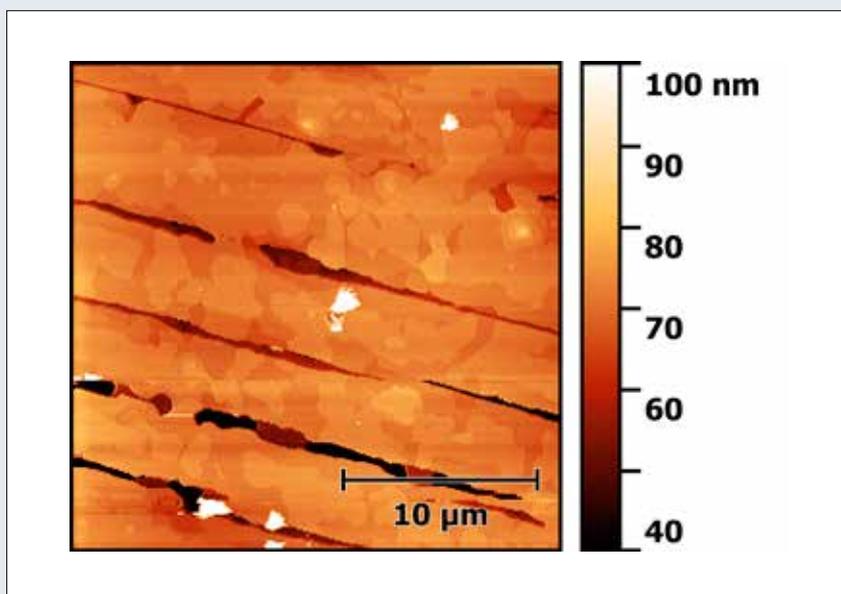


Optical micrograph of metallic contacts on a single-layer graphene flake.

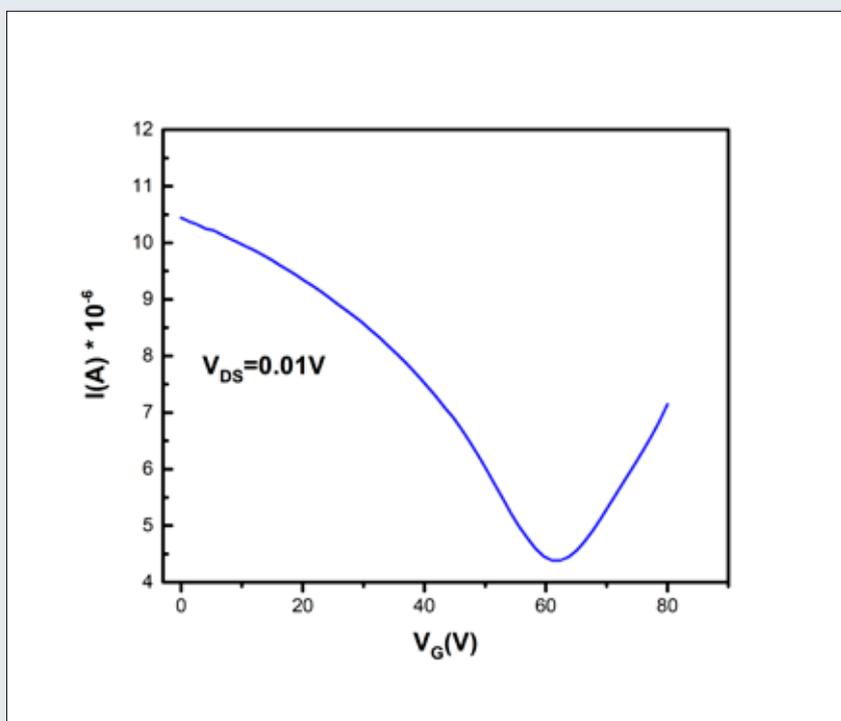
Thorough investigation of fast charge transport through large single-crystal organic semiconducting layers elucidated a new type of charge transport. We demonstrated that the degree of charge delocalization has a strong impact on polarization energy and thereby on the position of the transport band edge in organic semiconductors. This has important implications for the further understanding of the charge transport via delocalized states in organic semiconductors. The results were published in Physical Review B

We have studied submonolayer coverages of N,N-1H,1H-perfluorobutyl dicyanoperylene-carboxydiimide (PDIF-CN2) on mechanically exfoliated graphene transferred onto SiO₂ substrates. Our atomic force microscopy (AFM) data show that PDIF-CN2 forms irregularly-shaped 1.4 nm-high islands. From the selected area diffraction performed with transmission electron microscope (TEM) we conclude that this height corresponds to stacks of molecules, which are inclined for 43° relative to the graphene surface. AFM also showed complete absence of PDIF-CN2 on single-layer graphene (SLG). Electric force microscopy revealed a marked difference in surface charge density between a single-layer graphene and bilayer graphene, with a higher surface charge on SLG than on the bilayer graphene. We associate this behavior with type doping of graphene due to the electrostatic dipole induced by the molecular water layer present at the graphene/SiO₂ interface. The crucial role of the graphene/SiO₂ interface in determining growth of PDIF-CN2 was further confirmed by TEM examination of PDIF-CN2 deposited onto unsupported SLG. The results were published in Surface Science.

An alternate mechanism of intermolecular charge transport distinct from conventional mechanisms involving tightly bound p molecular orbital overlap, has been identified in curved and hollow aromatic molecules. Key to this type of electron transport mechanism is evidence of a set of diffuse molecular orbitals - Super Atomic Molecular Orbitals, SAMOs, universally existent in curved and hollow shaped molecules. Curved polynuclear aromatic hydrocarbons such as the smallest bowl structure corannulene, offer attractive alternatives to graphene nanoparticles or fullerenes.



Topography of a 20 nm thick layer of C8-BTBT crystals deposited by zone casting. The image was obtained using atomic force microscopy.



Current-Voltage Characteristics of Graphene Field-Effect Transistor.

Materials Research Laboratory

(Head: Prof. Dr. Matjaž Valant)

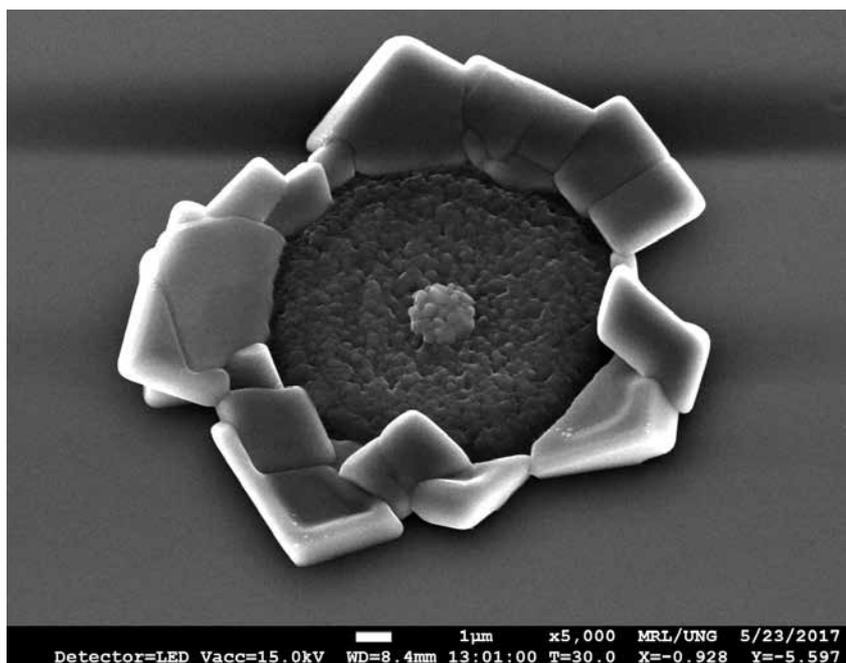
Material Research Laboratory was established in 2009 and has evolved in a sizable research unit with state-of-the-art equipment and diverse expertise of the team members ranging from synthetic and crystal chemistry, functional materials, surface science, theoretical and computational chemistry etc. We have not only maintained the initial research focus on environmental and electronic materials but also developed it towards new exciting and advanced material systems and processes that include topological insulators, biocompatible materials, nanostructured photocatalysts and materials in extreme environments. The joint efforts of the team members again resulted in some exciting discoveries and developments.

Research:

In the past year we have started a development of new technologies for grid electricity storage. The new concept of the energy storage is based on solid-state matter (material close-cycle technology) that can store energy with energy density as high as fossil fuels without emissions or industrial waste. The patent describing the new technology has already been filled at Slovenian Patent Agency. The research and development continues with optimization of all the segments of the new technology.

Meta-stable amorphous aluminum oxide was stabilized in a form of a nanocomposite, with polysilane molecules dispersed in a matrix of the aluminum oxide. The molecules induced stress and prevented crystallization of the amorphous aluminum oxide up to 1000 °C. This enables its use in high temperature catalysis.

Our microscopy center continued long-standing collaborations with Indian Institute of Technology Jodhpur on investigation of nanostructured films for sensing applications and University of Saint-Etienne (France) on properties of doped optical fibers and Ge-doped glass nanoparticles. A partnership with Sabanci University (Turkey) has started for investigation of rare-earths doped ceramics emitting in the visible light range.



Nano flower: Molybdenum-Sulfur microstructure (in collaboration with Dr. M. Kumar, Indian Institute for Technology, Jodhpur). Image was obtained using scanning electron microscope at Material research laboratory

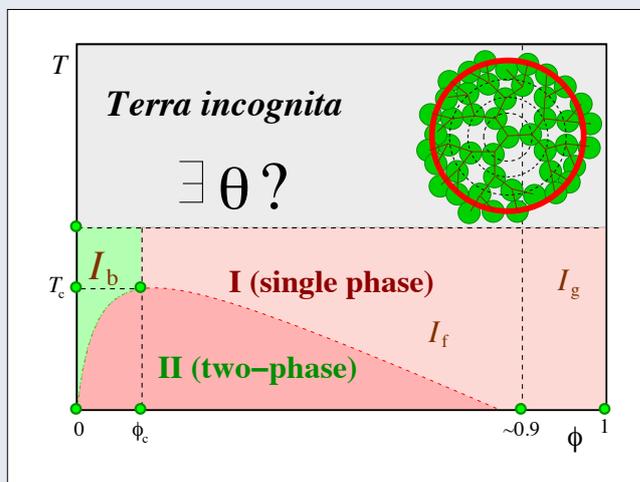
We were intensively studying metallic films deposited on topological insulators (TI). Aim is to characterize growth and structural evolution at the metal/TI interface. The Au and Ag interfaces with Bi_2Se_3 have been investigated by synchrotron light sources, diffraction techniques, and microscopy. We have found examples of chemically stable and instable interfaces. Both types were characterized in details to understand their applicability for functional devices.

Correlations between various treatments, micro-structure and mechanical properties were studied for Mg alloys. Theoretical studies showed that a Mg(11-20) surface exhibits electronic instabilities and low surface energy. A comparison between the calculated and measured quantities show that such surfaces can indeed reconstruct.

We were also studying polymeric materials in poor solvent conditions. Using Monte-Carlo simulations we have shown how secondary structures are formed. This result is crucial for understanding the ground state phase diagram of semi-flexible polymers under poor-solvent conditions. Methodology was extended from monomer size characterization towards measurements of the nanoparticles in a solution.

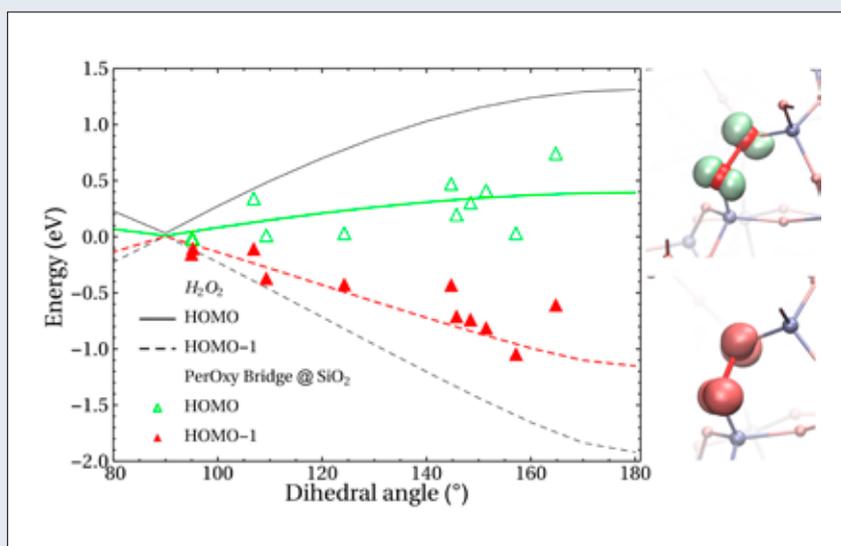
Partnering with Municipal Housing Company Ajdovščina d.o.o. we have started working on a project that aims to explore the biological potential of green algae for the biological remediation of waters contaminated with heavy metals. We want to find an efficient and cost-effective method of removing metal ions from waste water by autogeneous hydrogen produced by the green algae.

We were also developing a new green technology for metallization of polymer surfaces by exploiting the reductive potential of the algae. The algae metallization does not require expensive industrial plants, toxic and aggressive chemicals or high temperatures. These two projects are co-financed by the Republic of Slovenia and the European Union from the European Regional Development Fund.



Schematic phase diagram for polysilane dendrimer miscibility in temperature - volume fraction variables. Inset shows the analyzed dendrimer structure.

In collaboration with SISSA (Italy) and CEA (France) we have studied defects in irradiated rare-earth, phosphorus doped and oxygen loaded silica. The research of the optical absorption of P-defects improved understanding of the structure of the phosphorus doped silica glasses. We have also studied the restive switch phenomena and electric conductivity of multilayered metal/ SiO_2 /metal structure. A first principle study showed how the defect specific electronic states play fundamental role in electric conduction and defect diffusion.



Energy dispersion of two highest occupied defect states, created by dihedral angle distribution of peroxy bridge defect in amorphous silica, has significant effect on its optical properties. Inset images show plots of two involved states.

Laboratory of Quantum Optics

(Head: Prof. Dr. Giovanni De Ninno)



LKO focuses on investigating ultrafast response of electrons in topological insulators, superconductors, and metal/organic interfaces, with potential use, e.g., in spintronics and energy harvesting. LKO also participates in the development of the FERMI free-electron laser, one of the most powerful laser sources worldwide, which is opening unique opportunities for exploring the structure and transient states of condensed, soft and low-density matter. In addition, LKO uses X-ray synchrotron radiation for characterization of atomic and molecular structure of new functional nano-materials (e.g., Li-ion batteries, catalysts,...) and biological and environmental samples.

Researchers at the Laboratory of Quantum Optics (LKO) use ultrashort laser pulses, spanning the spectrum from the visible to the x-ray region, for basic and applied research in physics and material science. When such pulses interact with matter, they induce ultrafast electronic, structural or chemical changes, which provide information about the out-of-equilibrium states of matter and serve as input for the design of new materials.

Laboratory techniques:

LKO hosts the CITIUS high-harmonic generation (HHG) light source, producing coherent femto-second (10^{-15} s) pulses in the wavelength range from extreme-ultraviolet (XUV) to soft x-rays. The source is driven by an ultrafast Ti:SA laser, generating 35 fs pulses at 5 kHz with an energy of 3 mJ. By focusing these pulses onto a noble gas jet, high harmonics of the driving laser frequency are generated, spanning the spectral range from 80 to 20 nm.

The source is used in experiments in a pump-probe configuration, where part of the driving laser beam (which can first go through a non-linear crystal to generate the second or third harmonic or an OPA for obtaining a wavelength-tunable pump pulse) excites electrons in the investigated material to higher energy levels, which are then probed by ultrashort HHG pulses using a hemispherical or time-of-flight electron analyzer. This provides important information on the dynamics of the out-of-equilibrium states in the sample. The CITIUS light source can be used in a large variety of scientific and technological fields, ranging from physics to chemistry, and from biology to medicine.

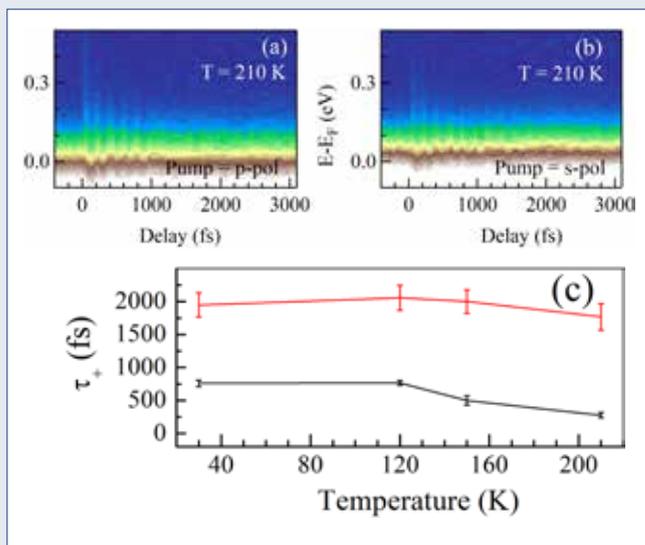
Recent activities:

The main activities were centered on the ultrafast response of electrons in iron-based superconductors. Using time- and angle-resolved photoelectron spectroscopy (Tr-ARPES), we observed orbital-dependent quasiparticle dynamics in EuFe_2As_2 , a parent compound of Fe-based superconductors. By adjusting the polarization of the pump laser either to p or s, we were able to observe the relaxation dynamics of d_{xz}/d_{yz} or d_{xy} orbitals, respectively. While d_{xz}/d_{yz} electrons relax faster through the

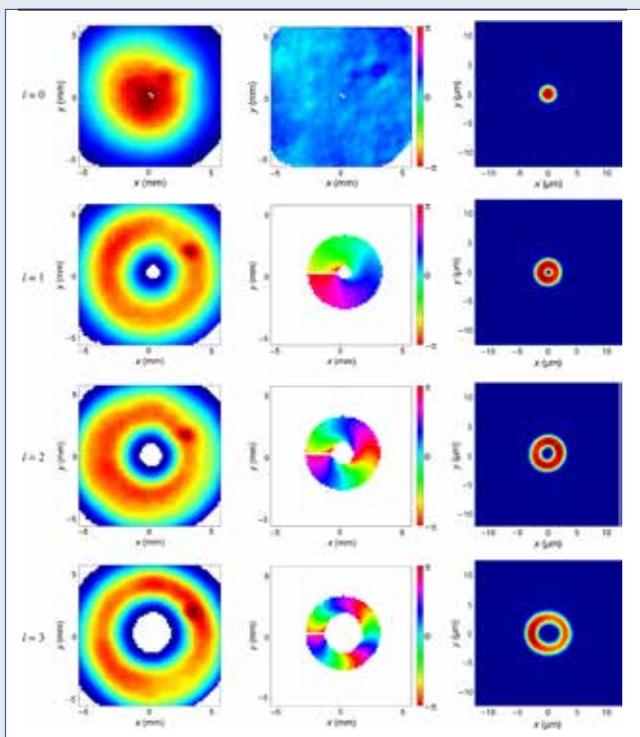
electron-electron scattering channel as they are itinerant in nature, d_{xy} electrons form a quasi-equilibrium state with the lattice due to their localized character, and the state decays slowly. Our findings suggest that electron correlation in Fe-pnictides is an important parameter, and therefore establish a strong connection with cuprates. The work is currently under review in *Physical Review Letters*.

LKO participates in the development of the FERMI free-electron laser (FEL) in Trieste, Italy, where studies were focused on the generation of FEL pulses carrying a tunable amount of orbital angular momentum (OAM). We developed an in-situ and an ex-situ technique for generating intense, femtosecond, coherent optical vortices with tunable OAM in the extreme ultraviolet. The first method takes advantage of nonlinear harmonic generation in a helical undulator, producing vortex beams at higher harmonics without the need for additional optical elements, while the latter one relies on the use of a spiral zone plate to generate a focused, micron-size optical vortex with a peak intensity approaching 10^{14} W/cm², paving the way to nonlinear optical experiments with vortex beams at short wavelengths. The results were published in the journal *Physical Review X* (doi.org/10.1103/PhysRevX.7.031036).

For characterization of atomic structure of different new materials and biological samples with X-ray absorption spectroscopy methods (micro)XANES and EXAFS we used synchrotron radiation at different European SR-laboratories (ESRF, Grenoble, France; Elettra, Trieste, Italy and PETRA III at DESY, Hamburg, Germany). In 2017, we performed in-situ and in-operando XAS analysis of different cathode materials for Li-ion, and Li- and Mg-Sulphur batteries with high energy density, different (photo) catalytic materials for water cleaning, and catalysts for other technological process. To resolve problems with environmental pollution with heavy metals (phytoremediation), and to increase concentrations of essential elements in the edible plant parts (biofortification), we used a combination of X-ray spectroscopy and sub-micron X-ray microscopy to efficiently assess metal bioavailability and their toxicity, and gain more knowledge on the mechanisms of metal uptake, accumulation and detoxification in living organisms.



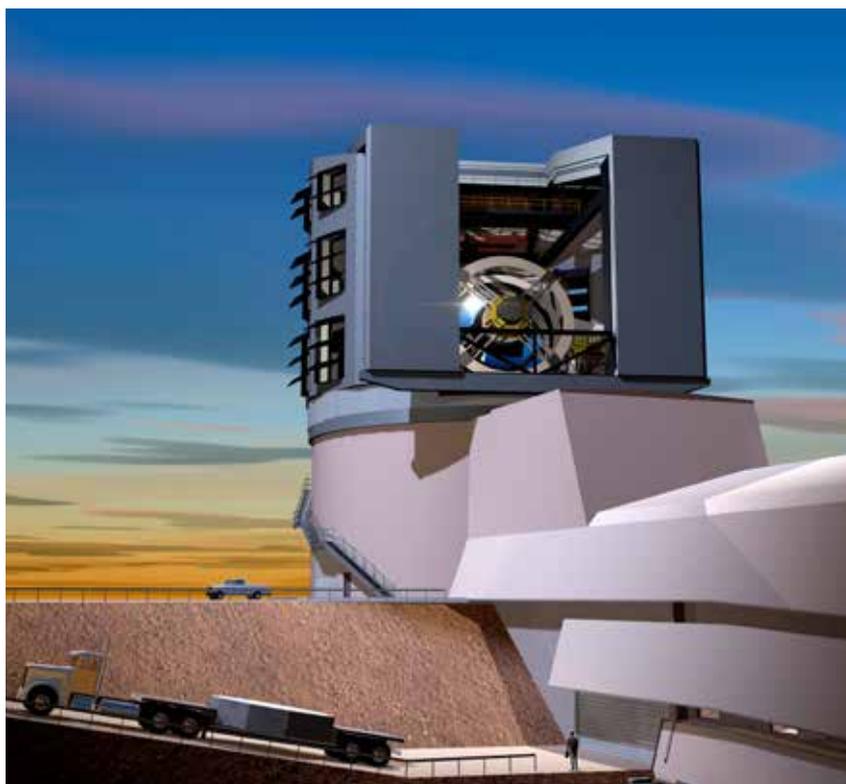
Tr-PES spectra as a function of the delay between the pump and the probe acquired at 210 K for (a) p and (b) s polarization of the pump. c) Decay time constants for excited electrons at various temperatures for p (black) and s (red) polarizations of the pump showing orbital dependent quasiparticle dynamics in EuFe_2As_2 .



Focused optical vortices with OAM (i.e., l or topological charge) from 0 (top row) to 3 (bottom row) generated at the FERMI free-electron laser in Trieste using spiral zone plates. The images show the far-field intensity (left column) and phase (middle column), and the intensity distribution in the focal plane (right column).

Center for Astrophysics and Cosmology

(Head: Prof. Dr. Danilo Zavrtnik)



LSST telescope will perform ten-year systematic sky survey, which is expected to improve the understanding of the evolution of the universe and astrophysical objects.

Pierre Auger Collaboration

Our flagship project is research of ultra-high energy cosmic rays with the world's largest cosmic ray detector, the Pierre Auger Observatory in Argentina. Upon collisions with nuclei of gases in the Earth's atmosphere, they create huge showers of secondary particles, which can be used to identify the properties of their primary cosmic particle. The observatory combines data from a grid of 1660 water Cherenkov detectors spread on the surface with data from four fluorescence telescope sites, observing excited nitrogen molecules along the shower path. Auger results support the production of extremely energetic cosmic rays via particle acceleration at astrophysical sites and the suppression of their flux due to interactions with cosmic microwave background. In 2017, we focused on searches for the signatures of very high energy gamma-ray flares from galactic astrophysical sources in Auger low-energy data, and on searches for ultra-high energy neutrinos via possible correlations of Auger events with astrophysical sources or remarkable transients, such as gravitational wave events recently observed by the LIGO experiment.

Connecting the studies of the phenomena on the extremely large and the extremely small scales via astrophysical observations of the Universe provides a more complete, unified picture of matter and its interactions. Combining the information carried by different cosmic messengers, such as charged cosmic rays, gamma-rays, neutrinos and gravitational waves is the key to better understanding of physical processes in the Universe. Our activities take place within international research collaborations Pierre Auger, Cherenkov Telescope Array, Fermi-LAT, Gaia, Liverpool telescope and Belle2 experiment, and are focused on the studies of cosmic rays, transient astrophysical phenomena, dark matter and possible mechanisms responsible for the matter – anti-matter asymmetry in the Universe.

Cherenkov Telescope Array Consortium

Studies of very high-energy cosmic gamma rays provide crucial information on non-thermal Universe. Contrary to charged cosmic particles, photons are not affected by magnetic fields, so they can point back to their production sites. Our research was coordinated within the Cherenkov Telescope Array (CTA) consortium, which started constructing a new generation observatory for the detection of gamma rays between 20 GeV and 100 TeV. Its two sites, one in each hemisphere, will provide full-sky coverage and considerably improve the sensitivity with respect to current experiments. In 2017, the University of Nova Gorica as a representative of the Republic of Slovenia became a full member of the Cherenkov Telescope Array Organization (CTAO), legal entity responsible for the construction and running of CTA observatories. Our main research activities were performed in collaboration with international partners, as we were involved in the development of silicon photomultipliers as light detectors for CTA cameras (U. of Padova), identification procedures for ultra-high energy cosmic ray sources amongst active galactic nuclei (U. of Innsbruck) and sensitivity studies for the search of dark matter in the Galactic center (INFN Trieste).

Fermi Large Area Telescope Collaboration

Fermi Large Area Telescope (LAT) is the main detector onboard the Fermi Gamma-ray Space Telescope, leading space laboratory for the high energy gamma-ray research since 2008. In the energy range between 20 MeV and 300 GeV, Fermi LAT so far discovered about 100 Galactic pulsars, more than 800 active galactic nuclei, and unexpectedly, a large bubble-like structure stemming from the center of the Milky Way above and below the Galactic plane. It also provided strong constraints on the nature of dark matter particles by investigating their decay or annihilation signatures in astrophysical objects.



Installation of mechanical support for the mirror of the first large telescope of the CTA observatory at La Palma, Spain, in December 2017.

Astrophysical transients

Our team is active in international collaborations studying astrophysical transient sources, which include gamma-ray bursts, the most violent explosions in the Universe since the Big Bang. We lead the international project for gamma ray burst optical afterglow observations with the robotic Liverpool Telescope on Canary Island La Palma. Using its SPRAT spectrograph, we contributed to the identification and classification of optical counterpart candidates of recent gravitational wave events, detected by the LIGO experiment. In 2017, we continued our activities related to Gaia and to the Large Synoptic Survey Telescope project, which will provide the biggest and most ambitious sky-survey so far, observing 20 billion stars and detecting numerous transient events.

International collaboration Belle2

A complementary activity of the Center is the involvement in the Belle2 Collaboration at the electron-positron collider SuperKEKB in the Japanese Center for Particle Physics. The Belle2 experiment, starting its activities in 2018, will focus on the discovery of new, as yet unknown types of processes which are necessary for the satisfactory explanation of the evolution of the Universe and of its present properties.



CTA Consortium meeting in La Palma, at the site of one of the future CTA observatories.

Center for atmospheric research

(Head: Prof. Dr. Samo Stanič)



Atmospheric observatory and weather station at Otlica in winter conditions.

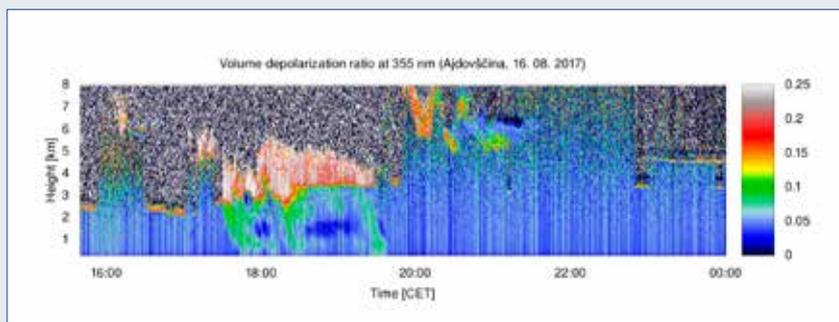
Atmosphere is our planet's envelope of gasses and suspended microscopic particles, the so called aerosols, and it is crucial environment for sustaining life on Earth. Center for Atmospheric Research focuses on the study of physical processes in the atmosphere using remote sensing and in-situ measurements as well as on modeling of atmospheric phenomena. Our research activities include the investigation of aerosol sources, propagation, influence on the atmospheric optical properties, the dynamics of atmospheric structures and the impact of atmospheric conditions on astrophysical observations. The Center is located at the University of Nova Gorica Ajdovščina site. It runs the atmospheric observatory at Otlica and is involved in the activities of the Pierre Auger Collaboration and the Cherenkov Telescope Array Consortium.

Lidar research

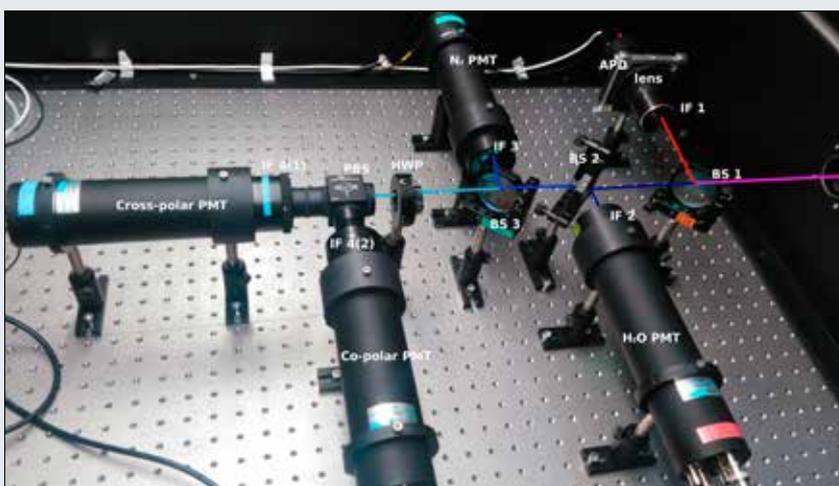
Lidar-based remote sensing of atmospheric properties and their temporal dynamics is a powerful tool for the investigation of local and regional aerosol transport, for the study of structures within the planetary boundary layer and for the study of air-flows in complex terrain. Center for Atmospheric Research (CRA) currently uses two lidar systems to pursue the above goals: a mobile elastic and fluorescence lidar with the capability of three-dimensional scanning of the atmosphere and the identification of biological aerosols and a stationary polarization Raman lidar, in operation at the CRA laboratory in Ajdovščina. In 2017, we completed the construction of the polarization Raman lidar and performed a number of tests to demonstrate its full aerosol characterization capabilities. Together with complementary in-situ black carbon content measurements we investigated physical and optical aerosol properties, as well as their spatial distribution in the atmosphere, with respect to their origin. Stable weather conditions in the atmospheric boundary layer were found to additionally prolong the presence of pollutants within the Vipava valley. Aerosols from different sources were sampled and their physical and chemical properties characterized by scanning electron microscopy, which allowed us to deduce how they affect atmospheric optical properties.

Bora wind studies

A phenomenon of strong, gusty, downslope wind, where the cold air flowing over an orographic barrier sinks and accelerates as it encounters warm air at the lee side is generally referred to as Bora wind. In the Vipava valley, Bora occurs when cold air-masses move over the Eastern Alps and down the steep slopes of the Trnovski Gozd plateau. It is more frequent in the winter and can reach speeds up to 52 m/s at the valley floor. Of particular importance to Bora studies is continuous monitoring wind properties with temporal with high temporal resolution, which we perform since February 2015, and regular lidar measurements of atmospheric structure and its dynamics, using aerosols as tracers for airmass motion. In 2017, we focused on the characterization of air-flow categories that occur in the Vipava valley, on the investigation of the corresponding atmospheric structures, and on the studies of the periodicity of Bora gusts using high temporal resolution wind data. As a result, we published a paper entitled *Lidar measurements of Bora wind effects on aerosol loading* in the *Journal of Quantitative Spectroscopy and Radiative Transfer*, which describes the first characterization of atmospheric Kelvin - Helmholtz waves in Slovenia. Based on the above research work our colleague dr. Maruška Mole in September 2017 successfully defended her dissertation entitled *Study of the properties of airflow over orographic barrier*. In addition to remote sensing, we started to investigate Bora wind effects on structures by the means of CFD simulation and modeling. We also started to investigate applicability of the empirical power-law and the logarithmic-law on the Bora wind velocity profiles, based on the analysis of vertical wind velocity profiles for specific sites affected by Bora in different meteorological conditions.



Measurement of depolarization ratio in the troposphere using a polarization lidar enables us to distinguish between different types of aerosols. Raindrops in the figure are depicted in green.



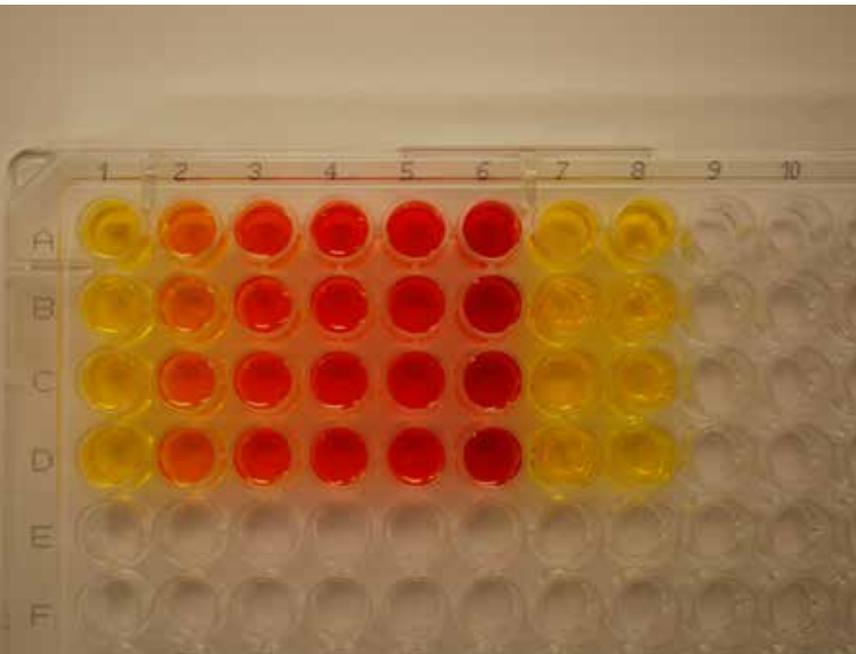
Spectroscopic filter of the new polarization Raman lidar in Ajdovščina.

Applicative research

The observatory at Otlica above Ajdovščina (965 m above sea level) is a node in the national grid of meteorological and environmental stations, administered by the Slovenian Environmental Agency, and a member of the European Virtual Alpine Observatory. Standard monitoring data for temperature, humidity, wind speed and direction, ozone concentration and solar irradiation, are available on line at the Agency's and Center's web portals, as well as a live web camera oriented towards the south-west, which allows us to observe the approach of weather fronts. The observatory also hosts an aethalometer that monitors the presence of black carbon (in collaboration with Aerosol d.o.o.), light pollution monitor (in collaboration with Universidad Complutense de Madrid) and three passive remote sensing devices investigating climate change related stratospheric processes at about 90 km above the ground (in collaboration with Earth Observation Center of the German Aerospace Agency – DLR).

Wine Research Centre

(Head: Doc. Dr. Melita Sternad Lemut)



DNS method for determination of reducing sugar (Glucose standards: 1A-D 0, 2A-D 0.05, 3A-D 1.0, 4A-D 1.5, 5A-D 2.0 and 6A-D 3.0 mg/mL glucose; *M. guilliermondii* Ca81 7A-D; *S. cerevisiae* Ca39).

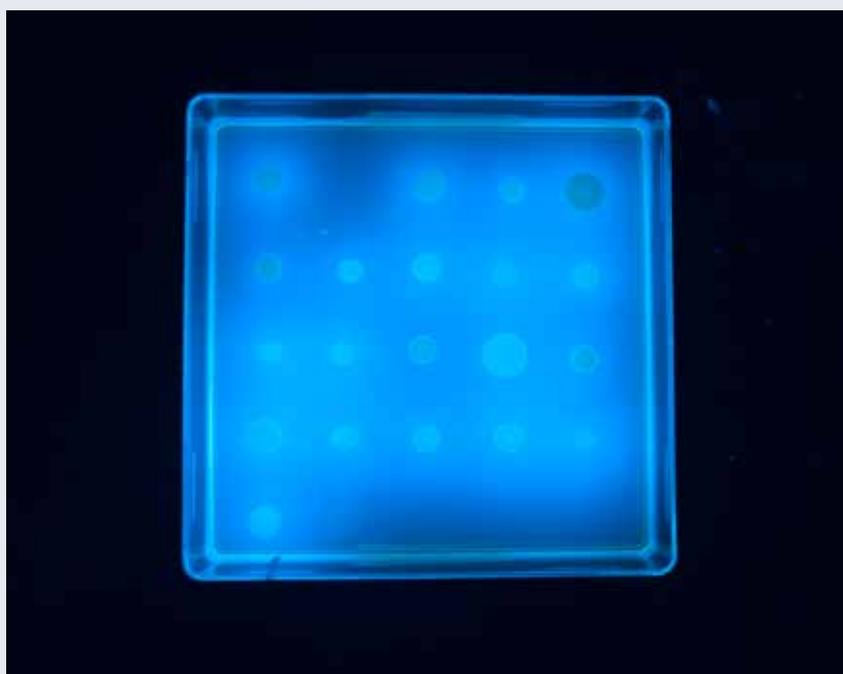
The research activities of Wine Research Centre (CRV) in 2017 were focused mainly on cooperation with Norwegian partners project New cider products from Hardanger; working on ARRS postdoctoral project Facilitating green care in viticulture by means of metabolomic-based front line conception; setting up a new research on water stress effects on grapevine physiology and grape metabolites and starting two new projects (EnViRoS in AGROTUR II).

The project with Norwegian partners is carried out in cooperation with local cider producers and Research Institute NIBIO (Ullensvang). With the aim of cider quality improvement, we were testing new technological strategies in comparison to the traditional approach. Experimental ciders were sensory and chemically evaluated, later with the help of modern analytical approach of targeted metabolomics, providing many new data mainly on influence of technology on phenolic and aroma compounds. We also continued to work on the study of wild yeasts ecology of traditional Hardanger production area. From ciders, soils and apple trees we managed to isolate about 1,300 yeasts. Based on the multiplex PCR results the yeasts were grouped into the *Saccharomyces sensu stricto* complex and non-*Saccharomyces* yeasts. The isolates were determined to the species level by performing the restriction analysis of ITS PCR products.

Wine Research Centre (CRV) is uniting the researchers and multidisciplinary research activities that are related to the fields of viticulture and enology (plant physiology, biochemistry and pathology; viticulture and wine-making technologies; sustainable viticulture; fruits, grape and wine analytics; microbiology and molecular biology of yeasts, grapes and wine; biotechnology). We operate in the laboratories of Lanthieri Mansion in Vipava and in the fields, including the University's own vineyard. Our primary studied plant is grapevine (with the processing of grapes to wine) but we also focus to some fruit plants, olives and apple wine (cider). We deal with both applicative research, addressing current problems in the field, as well as expert, more future-oriented research.

Within ARRS project we investigated the potential of more sustainable controlling of grapevine biotic diseases. In particular we focused to *Botrytis cinerea* infection control on disease sensitive Pinots varieties. We were exploring the potential of CRV yeast collection as biological agents in combination with selected viticulture techniques and thus developing the methods for testing the yeast for the formation of substances that can inhibit the growth of pathogenic fungi. By screening tests we selected potential biocontrol yeast and introduced the testing by using vine plant tissue culture followed by field experiment on selected grapevine varieties. To explore the influence of newly introduced biocontrol yeast to the vineyard, we performed microvinifications of all the observed combinations of biocontrol yeast and viticulture techniques. Experimental wines were sensory and chemically (metabolomics) evaluated.

In cooperation with University of Udine and BOKU University of Vienna we opened a new research area on studying the consequences of short and long-term water deficit on grapevine physiology and grape metabolites. Joint project is trying to understand the behaviour of a grapevine in two different environments (cool, warm) subjected to identical water constraints. First experiments were carried out on potted Gruner Veltliner vines. In the season, the measurements of plant photosynthesis, stomatal conductance, evapotranspiration and leaf expansion were conducted and the samples were also stored for the later metabolomic analyses.



Qualitative detection of the β -glucosidase activity in tested yeast strains using screening methods based on YPD solid medium supplemented with β -D-glucoside methylumbelliferyl- β -D-glucoside as substrate.

In addition, CRV started with partner activities of two new projects: transnational ERA-NET ArimNet2 project »EnViRoS« (Opportunities for an Environmental-friendly Viticulture: optimization of water management and introduction of new Rootstock and Scion genotypes) and cross-border project AGROTUR II, following AGROTUR I, devoted to sustainable development of Karst agriculture and tourism.

Two doctoral students are active in CRV with the first focusing to the studies of potential yeast bio-fungicidal properties and the second testing (in cooperation with LELS) the introduction

of new analytical approaches for rapid quantitative analysis of bioactive compounds arising during and after alcoholic fermentation (piranoanthocyanins) and malolactic fermentation (biogenic amines).

The group is also active in developing research collaboration with private companies and especially discussions with Laffort Oenology, a world leading area R&D company have already given results in form of an agreed financing of a 6-month project, which, in cooperation with KIS (Ljubljana) and FEM (San Michele, Italy) will be dedicated to the atypical aging of white wines.

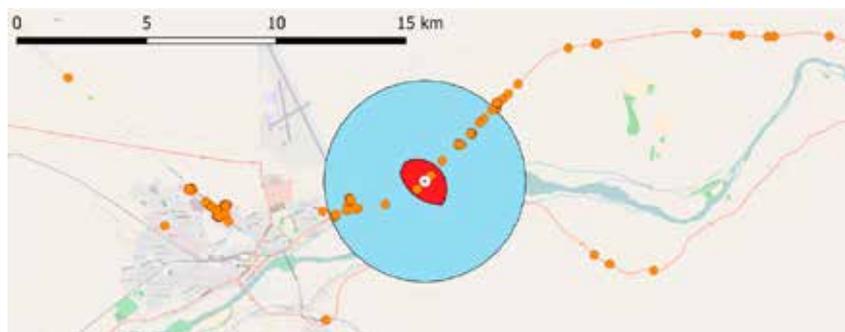


Grapevine vitro-plant experiment with selected biocontrol yeast: Vitro-plant of *V. vinifera* L. cv. Sauvignon; after 2 weeks of incubation following inoculation with biocontrol yeast ZIM 624 *Pichia guilliermondii* and/or infection with F61 *Botrytis cinerea*.

Center for Information Technologies and Applied Mathematics

(Acting Head: Prof. Dr. Irina Elena Cristea)

The Center for Systems and Information Technologies (CSIT) has changed the name into Center for Information Technologies and Applied Mathematics at the end of the year 2017. Center is an interdisciplinary research group with the activities at the intersection of computer science and informatics, mathematics, control systems technologies, and process engineering. It develops novel approaches to modeling and applies them to a wide range of problems, from industrial engineering practice to education and biomedicine. Methods for intelligent data analysis are being developed and applied to the domains where IT support is required for knowledge discovery aiming at understanding complex diseases, phenomena in the environment, or problem solving in various complex domains, especially in engineering. In mathematics we contribute mainly with a study of algebraic hyperstructures and with the stability and robustness for dynamical systems.

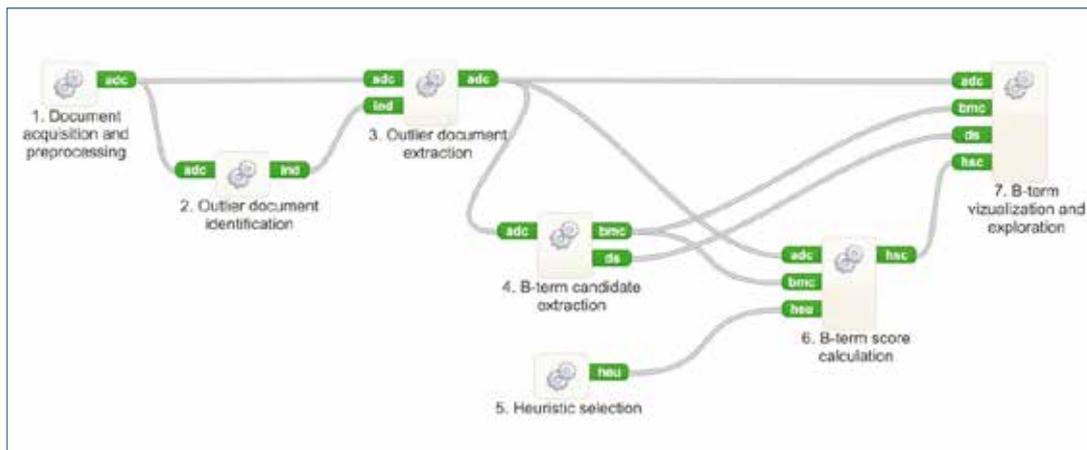


Example of TA filter (in light blue) over all the possible candidates (in orange).

In 2017 the Center for Systems and Information Technologies (CSIT) employed six researchers.

In collaboration with the University of Udine and international companies, we continued to work in the field of geographic information systems and spatio-temporal databases, focusing on positioning and tracking systems. On one side, working on a general modeling of cellular networks based on observation of positioning systems, we are analyzing spatial and temporal changes of the network in different granularity levels. Spatial and temporal changes, combined with Timing Advance measurements, were used to improve the position estimation in fingerprinting positioning systems (Figure 1). On the other side, focusing on mobile devices, we started to study trajectories working on map-matching algorithm.

In the field of knowledge discovery from large textual databases, the center focused on the development of innovative methods for knowledge discovery in biomedical applications. In collaboration with the Jožef Stefan Institute, we proposed a cross-domain literature mining methodology with improved efficiency by exploring outlier documents (Figure 2). The results of its application to better understanding of the phenomena manifested in the context of “Brain-Gut Axis” was published in two international journals.



A top-level workflow of the proposed methodology in TextFlows.

In the center we studied the process of transformation of educational activities towards more flexible and open education based on information technologies. In particular, the situation at the University of Nova Gorica was analysed to identify benefits and difficulties and to suggest improvements. A comparative analysis of bridging mathematics courses at the University of Nova Gorica and University of Udine has also started.

The research on modelling of dynamic systems and applications of these models was pursued in the framework of research projects at Josef Stefan Institute. Research activities were pursued in the direction of the development of Gaussian-process models and their applications for environmental systems. In particular models of air-pollution with ozone and of atmospheric variables have been investigated.

We continued to participate in international research projects that are mainly related to the development of the energy supply systems for the buildings, and the adaptation of fiscal policies of local communities to promote use of renewable energy sources. We were invited to participate in the Expert Council of the Ministry of Infrastructure as a support in the planning of the development strategy in the field of energy and buildings. We provided expert help to several municipalities in Slovenia with the emphasis on the design of Local Energy Concepts.

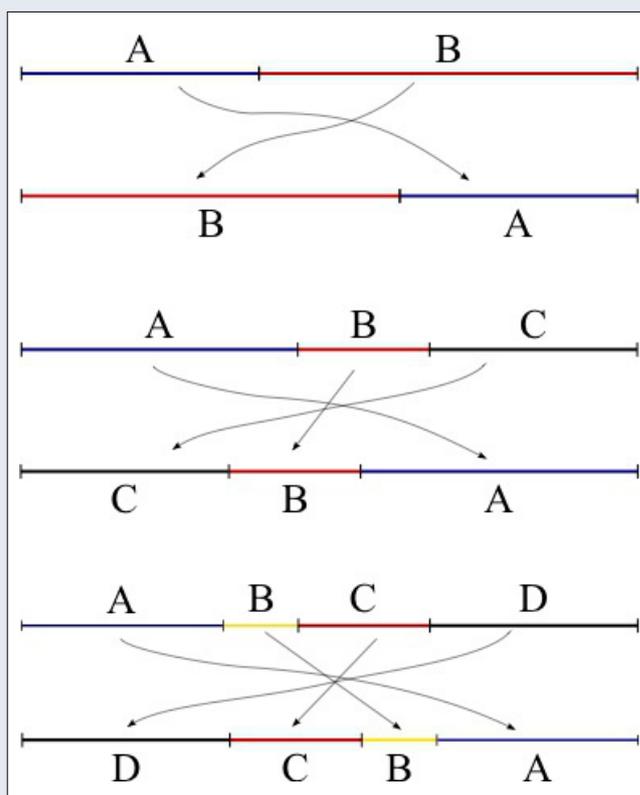
In the field of algebraic hyperstructures we continued our research on both pure and fuzzy hyperstructures. Based on the concept of composition ring, we introduced the notion of composition structure for (m,n) -hyperring, investigating its properties and connections with composition hyperring. Inspired by the classical concept of height of a prime ideal

in a ring, we have started the study of the notion of height of a prime hyperideal in a Krasner hyperring. In the framework of fuzzy hyperstructure theory, we have defined and characterized new types of fuzzy hypermodules. In this context, the center was collaborating with researchers from Iran and Czech Republic.

In the framework of dynamical systems, a generalisation of the Pugh's closing lemma was proved for divergence-free flows in Euclidean spaces. Applicability of numerical methods was studied for non-smooth systems by methods of Topological Dynamics and Ergodic Theory. Techniques of linear systems of ordinary differential equations (Hyperbolicity Theory,

central exponents, etc) were adopted to systems on time scales. Moreover, a model for stock exchange player was developed. Surprisingly, this model could be reduced to the famous interval exchange dynamics (Figure 3).

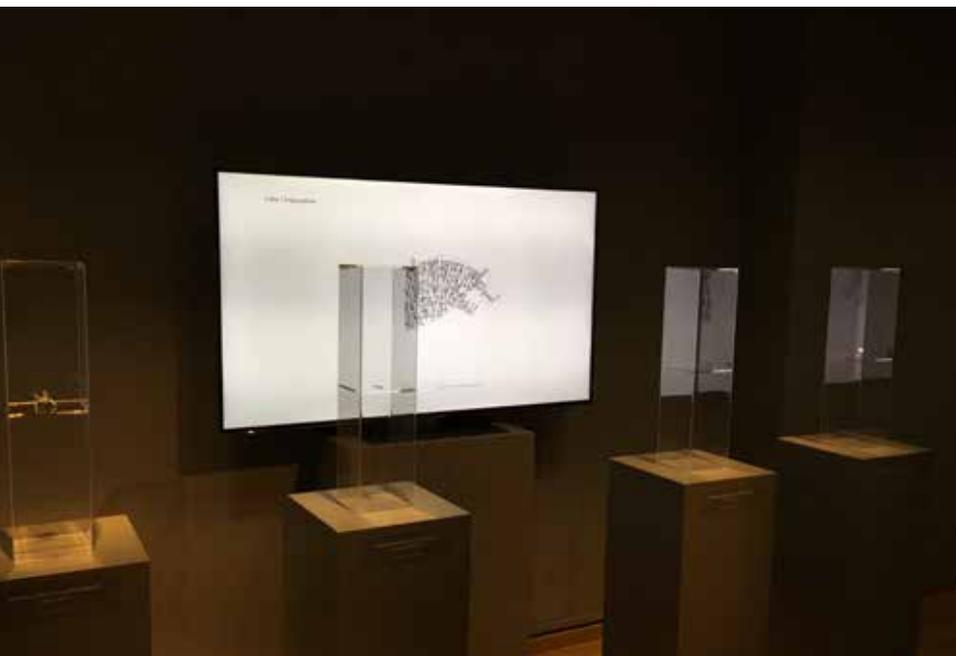
A one-day workshop on Dynamical Systems was organised at CSIT in December. The main aim of this workshop is to meet colleagues who work in Dynamical Systems and related areas in all over the region. There were 9 participants from Slovenia, Italy, Austria and Croatia representing distinct areas of Differential Equations and Dynamical Systems.



Model of the interval exchange dynamics

Research Centre for Humanities

(Head: Prof. Dr. Aleš Vaupotič)



3-D visualization of Women Writers, installation (Narvika Bovcon, Aleš Vaupotič; TTT, HERA)

Research Centre for Humanities operates in the fields of literary studies, cultural history and digital humanities. The approaches are mutually connected. Comparative literary studies enable reflecting the complexity of human communication and forms of coexistence. Cultural history is expanding historical research on the level of cultural practices. We understand digital humanities as critical thinking methods of the humanities in the context of the progressive digitalization of culture and communicational media. Topics: distant reading, the role of writers in the literary culture; literature at the junctures; questions of humanities in the context of digitization; historical transformation of scientific institutions, environmental perception in Slovenia.

Research activity

Aleš Vaupotič, Assoc. Prof., PhD, is Head of the Research Centre for Humanities. In the field of literary studies work is organized in several research areas. Research is also oriented to the field of cultural history operated by Željko Oset, Assist. Prof., PhD.

In the year 2017 Katja Mihurko Poniž, Prof., PhD, continued to lead the research activities in the field of women's literary authorship in connection with digital humanities. We have become the new working group within DARIAH network (Women Writers in History). In the year 2017 we have also joined the new COST Action, entitled *Distant Reading for European History*. Katja Mihurko Poniž is the Science Communication Manager of the Action. This Action's challenge is to create a vibrant and diverse network of researchers jointly developing the resources and methods necessary to change the way European literary history is written. Grounded in the distant reading paradigm (i.e. using computational methods of analysis for large collections of literary texts), the Action will create a shared theoretical and practical framework to enable innovative, sophisticated, data-driven, computational methods of literary text analysis across at least 10 European languages. Fostering insight into cross-national, large-scale patterns and evolutions across European literary traditions, the Action will facilitate the creation of a broader, more inclusive and better-grounded account of European literary history and cultural identity.

Special attention is given to the space, where our university is located, that is at the crossroads of Slavic, Romance and Germanic Worlds. Ana Toroš, Assist. Prof., PhD, is conducting research in the frame of regional comparatistic, which overcomes the boundaries of national literary histories, as well as in the frame of minority literature, including the methodological and theoretical aspects of literary imagology. From September 2017 she is the project leader within the INTERREG project EDUKA 2, UNG being one of the project partners. She is leading the research activities at the UNG that involves colleagues from the Research centre for humanities and humanities students at UNG.



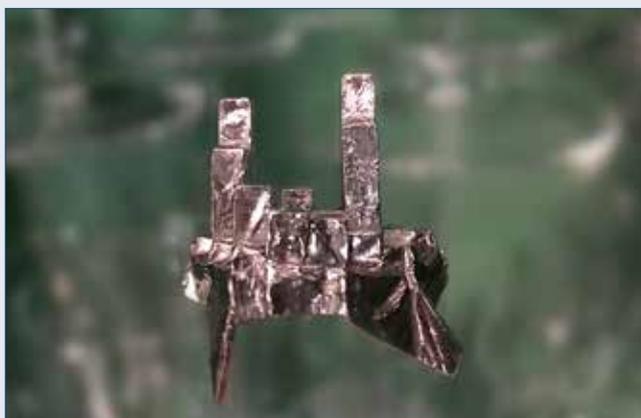
Discussing the problem of Dissidents in Slovenia and in Croatia, colloquium organized Željko Oset.

The third field represents exploring the relationship between literature and new media in the perspective of the macro changes in world history. In this context, attention is devoted to the rapidly evolving field of digital humanities and review of new media writers from Slovenia and the world, particularly their attitude towards new media art at the edge of language. Aleš Vaupotič, Assoc. Prof., PhD, expanded his research including issues of research organization of interdisciplinary cooperation. Within his doctoral research young researcher Rok Andres has associated literature with plural media-language of theatre.



3-D visualization of Middlemarch (Narvika Bovcon, Aleš Vaupotič; TTT, HERA).

Željko Oset, Assist. Prof., PhD, in the field of cultural history has studied two sets of issues of contemporary cultural history: the history of the Slovenian Academy of Sciences and Arts and the social image Teharje kosezi community from the Middle Ages to the First World War (project *Social and identity mobility in the Slovenian territory between the late Middle Ages and the disintegration of the Habsburg Monarchy*). He studies the presence and development of ecological perception in Slovenia during the communist period. Oset also collects scattered resources about environmental activism as adjunct member of the project *Connecting collections: Cultural Opposition – Understanding the Cultural Heritage of Dissent in the Former Socialist Countries* (COURAGE), and thus enabling further and more detailed research about environmental activism in Slovenia.



3-D visualization of Spanish Women Writers (Narvika Bovcon, Aleš Vaupotič; TTT, HERA).

In the centre there are employed young researchers Rok Andres and Mateja Eniko. Mateja Eniko focuses on the study of Slovenian and foreign contemporary poetry, especially the image of the artist and self-reflection in poetry.

Center for Cognitive Science of Language

(Head: Doc. Dr. Rok Žaucer)

Center for Cognitive Science of Language is an interdisciplinary research center of the University of Nova Gorica. Our core expertise is in formal generative linguistics, which we use as a foundation for engaging in other domains of language-related cognitive science – especially language processing, language acquisition and bilingualism.

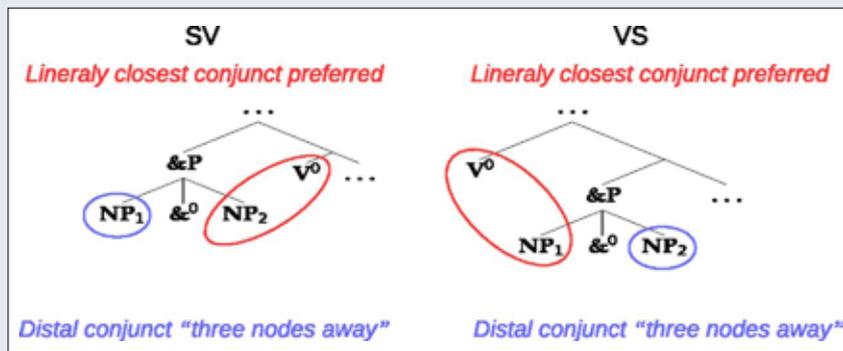
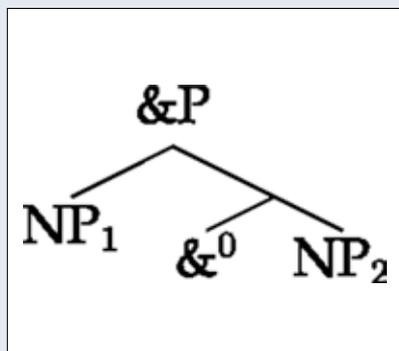
At the focus of our research are investigations of theoretically relevant syntactic and semantic/pragmatic aspects of different languages. We strengthen the reliability of our data and analysis assessments by using corpora, large judgment samples, and various behavioral experiments (e.g. sentence production for comparing models of morphosyntactic agreement, reaction times in *wh*-word analysis, developmental tasks for studying the pragmatic abilities of bilingual children).

The *Center for Cognitive Science of Language* group specializes in formal generative linguistics, especially syntax and semantics/pragmatics, and uses this as a foundation for engaging in other domains of language-related cognitive science – especially language processing, language acquisition and bilingualism.

Basic research topics recently investigated in the Center include the following:

In the context of the FP7 project 'ATHEME', which deals with various aspects of multilingualism in the individual and the society, we have collaborated with the Lyon Laboratory on Language, Brain and Cognition in an investigation of the potential advantages of early bilingualism in children in the development of pragmatic abilities for reconstructing silent language elements. We found that early bilinguals have an advantage over their monolingual peers, whereas we found no advantage for adult second-language learners over their monolingual adult peers.

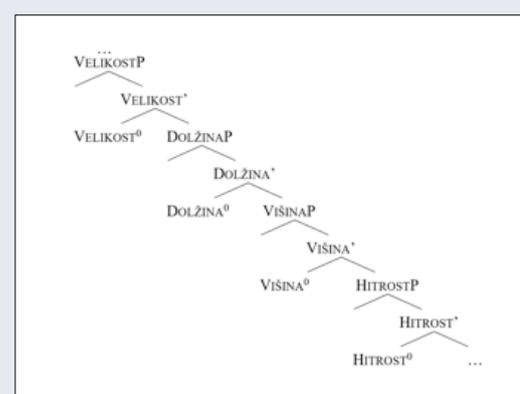
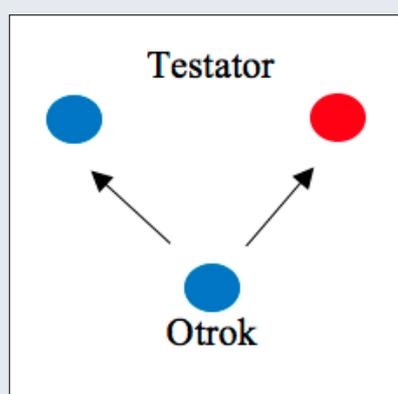
Within the same project, we investigated whether early bilingualism and early musical training enhance the ability to discriminate between prosodic patterns corresponding to different syntactic structures in otherwise phonetically identical sentences in an unknown language. In discriminating phonetically identical but prosodically different sentences, musicians, bilinguals, and bilingual musicians outperformed control groups. These results underscore the significant role of both types of experience in enhancing the listeners' sensitivity to prosodic information.



Within the project ‘Experimental Morphosyntax of South Slavic Languages’, headquartered at University College London, we continued with psycholinguistic explorations of the combinatorial possibilities of the South-Slavic number and gender agreement system on the basis of which we have been reassessing and complementing the findings of traditional dialectology, which were based on lexical similarities, with comparisons of morphosyntactic systems. Results from this study have been accepted for publication in the prestigious journal Proceedings of the National Academy of Sciences (PNAS).

We investigated the nature of language change through the lens of the expression of possibility modality. We tracked the development of the Modern-Slovenian possibility system, which had been recognized as a peculiarity among European languages. Led by certain dialects which exhibit partly divergent subsystems of possibility expression, we managed to derive the peculiar pattern with independently well-established processes of language change, while explaining another aspect of crossdialectal divergence in this domain through language contact of western Slovenian dialects with Romance languages.

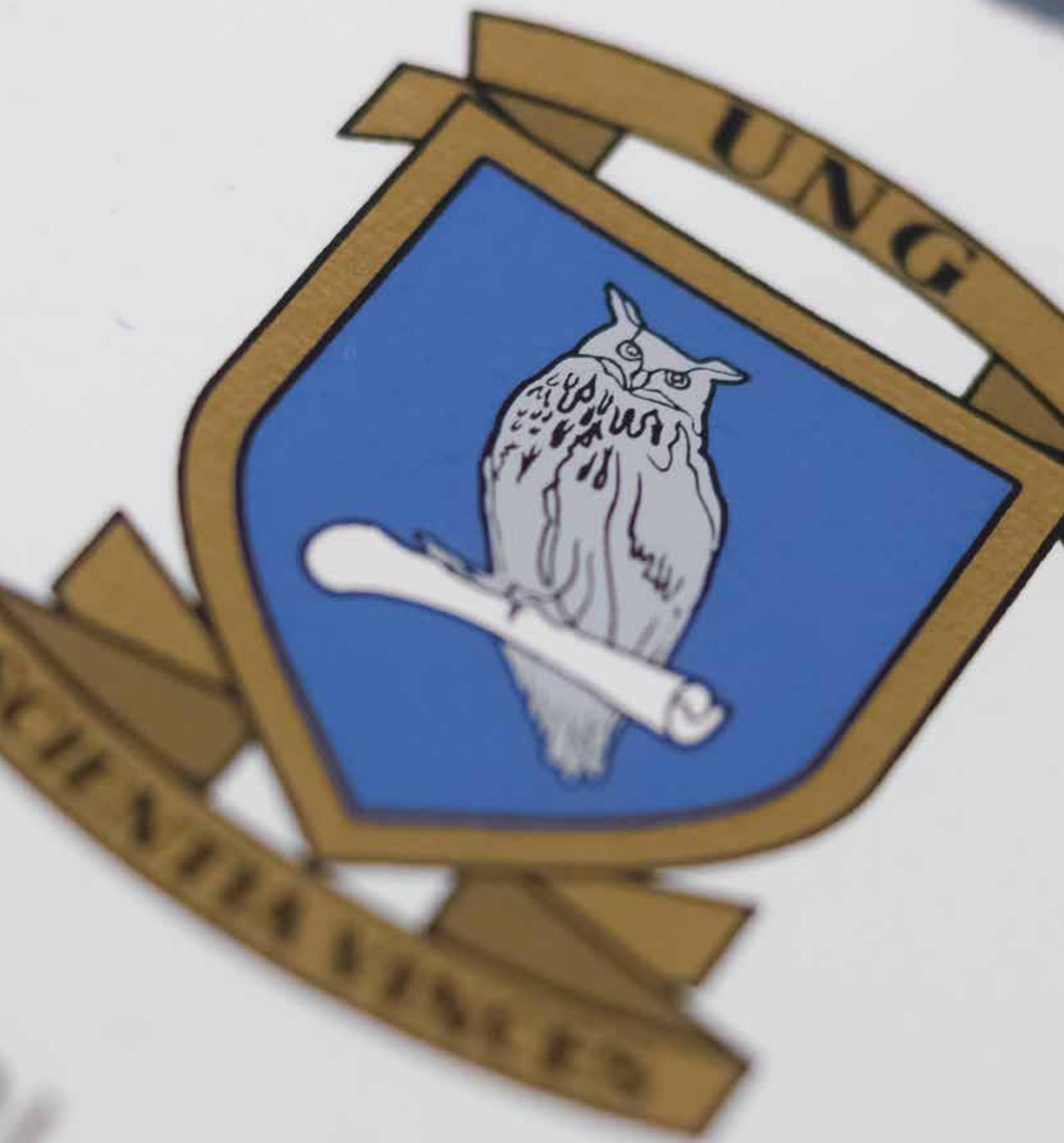
Within the Slovenian Research Agency-funded project on the cognitive basis of the cartographic hierarchy of functional projections in the noun phrase, we tested preschool children’s acquisition of nonlinguistic concepts of color, size and shape, as well as adults’ perception biases with respect to these concepts. We then tested how these results compare with the results that had been independently obtained with linguistic methods in theoretical linguistics, thus looking for potential cognitive basis for theoretical linguistic postulates.



Other work recently conducted in the Center includes the following:

2017 was the third year that saw us run the outreach center ‘Večjezičnost velja’ (<http://vecjezicnost.ung.si/>). This is the Slovenian branch of Bilingualism Matters, established in 2008 in Edinburgh, and targets families, teachers and anyone else who might have questions about raising bilingual children or about an adult life with more than one language. The center offers individual counseling and organizes public events with which we disseminate information and new, science-based findings about multilingualism.

Members of the Center took part in a round-table event reflecting the role of language editing organized at the Slovenian Ministry of Culture by the Slovenian Language Editors’ Association, and in a round-table event discussing linguistic aspects of place names hosted by Radio Študent.



UNIVERSITY

Pedagogical Work

In 2017, the pedagogical work at the University of Nova Gorica was done within six schools and one graduate school: School of Environmental Sciences, School of Engineering and Management, School of Science, School of Humanities, School for Viticulture and Enology, School of Arts, and Graduate School, and at those schools, we had the following programs: Environmental Sciences, Physics, Humanities, Karstology, Economics and Techniques for the Conservation of the Architectural and Environmental Heritage, Molecular Genetics and Biotechnology, and Cognitive Science of Language.



School of Environmental Sciences

(Head: Prof. Dr. Matjaž Valant)



Students of the School on the field trip in the olive plantation and vineyard

The study program Environment, Level I is an undergraduate program to obtain a university degree. The program offers all important contents from natural sciences and technical and social subjects related to environmental issues such as pollution of water, air and soil, environmental monitoring, waste management and environmental protection, management and economics. The basic goal of the program is to educate experts that will be able to conduct work on research, technical and managerial fields related to environment. This goes for different industrial sectors, lawmaking and law executing area on national and local levels.

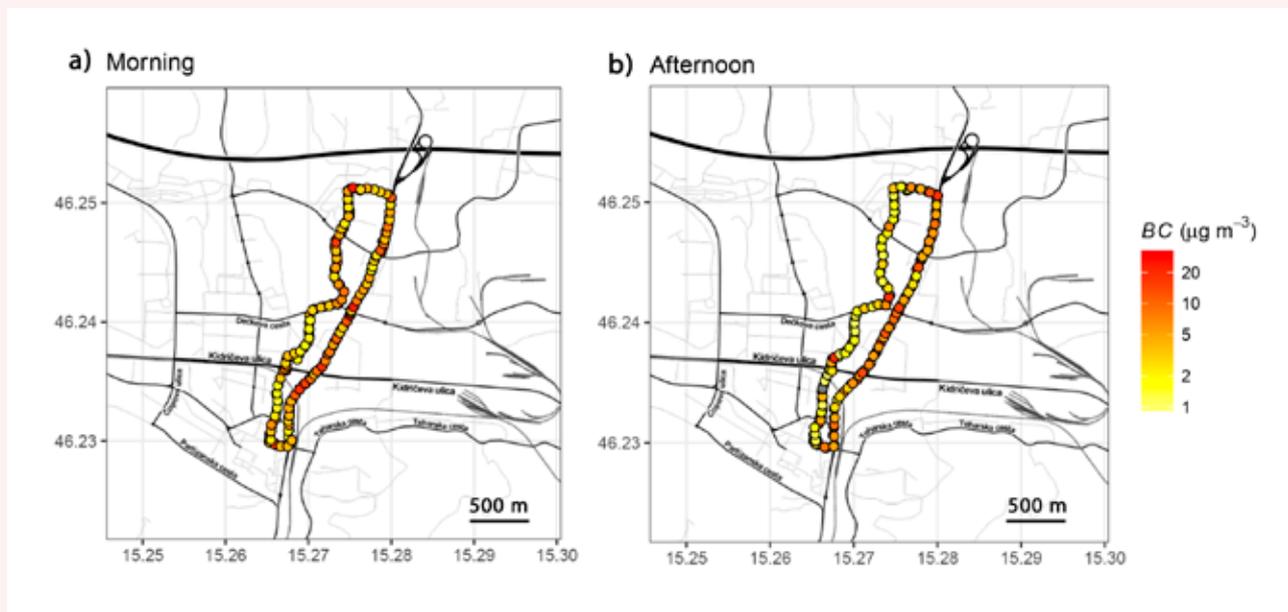
Study Programmes:

Bachelor's Study Programme Environment (First Level)

Master's Study Programme Environment (Second Level)

School for Environmental Sciences educates in the field of research, preservation and management of environment. The university study program Environment was according to the Bologna Directives modernized in changes into study programs Environment, Level I and Environment, Level II. The I. and II. level programs received public accreditation with declaration of Directorate for Higher Education of Republic of Slovenia on date 12. 10. 2007 and 15. 2. 2008, respectively. Continuously, we are modernizing the contents of the both study programs. Among others, we have introduced obligatory practical training for the I. level students and substitute a diploma thesis with a diploma seminar. In addition, we have introduced up-to-date contents among mandatory courses on the II. Level.

The School has agreed with University Ca' Foscari from Venice a double degree program – »Double-Master's Degree in Environment, Sustainable Chemistry and Technologies« that started in 2014/2015 school year. Students that decide for this possibility fulfill the student obligations at both universities, according to the agreement, and receive a diploma certificate from both universities.



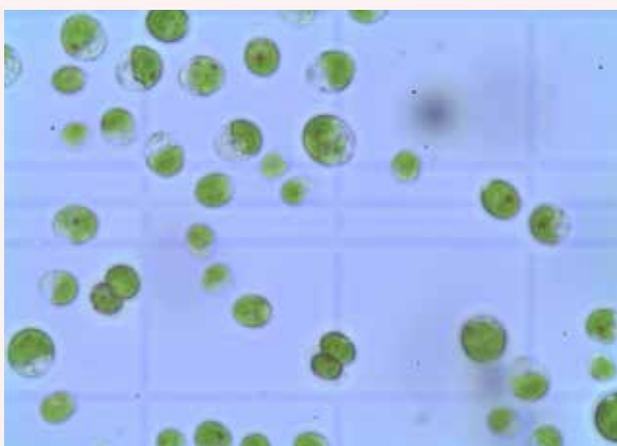
Exposure to balck Carbon during cycling along two alternative cycling routes in Celje.

In 2017/2018 school year we enrolled an eleventh generation of students in the study program Environment, Level I. Beside mandatory and selective courses the students had an opportunity within their field trips, excursions and group projects to see waste landfills, experimental stations and institutes, industrial facilities, power plants and regional parks.

A uniqueness of our study program Environment Level I is a course called Group project, which introduces a modern approaches to education through project work. Emphasizes are on solving practical problems related to environment and working in a multidisciplinary group. Within the School we have finished the PKP project called Black Bicycle, where we analyzed exposure to blkck carbon along different alternative cycling routes in Celje. The project was coordinated by dr. Asta Gregorič. Based on the project results the paper was published in a journal called Amosphere. On the study program Environment Level I we have graduated 7 students in 2017. For study achievements we awarded students+ Jacopu Segato with Alumnus Primus.

The study at the Environment, Level II takes four semesters to complete and is exceptionally interdisciplinary. It offers courses from all important fields of environmental sciences but also enables students to deepen their knowledge in their fields of interest by choosing from a large selection of the selective courses. On the Level II the project work is performed individually within a course Individual projectIn 20176 eight students has received the master thesis.

The School has been actively involved in international exchange of students and professors, which has mainly been organized within Erasmus program. Within this exchange four our students has travelled to perform practical work and study in Latvia, Spain, Germany and Austria. We accepted four students from Latvia and Turkey.



Green algae *Clamydomonas reinhardtii* at 400x magnification under light microscope were sulfur-deprived for two days in order to trigger hydrogen production.

School of Engineering and Management

(Dean: Prof. Dr. Prof. Tanja Urbančič)



Study Programmes:

Bachelor's Study Programme Engineering and Management (First Level)

Master's Study Programme Engineering and Management (Second Level)

Bachelor's and Master's Programme of Engineering and Management are pursued at the School of Engineering and Management. Graduates there are educated to identify and solve problems of economically efficient and sustainable business and industry based on their knowledge of technology, economy and management. Relations with companies, various institutions and local community are crucial for the school. These relations enable exposure of students to realistic problems within academic curricula and provide conditions for high employability of programmes' graduates. The school with enrolled students from eleven different countries possesses increasingly international atmosphere. Students of the School of Engineering and Management are awarded repeatedly in student competitions organised by various companies and professional societies.

The eleventh generation was enrolled to the Bachelor's programme and the twelfth generation to the Master's programme at the School of Engineering and Management in year 2017. The Bachelor's programme in English language is started in parallel to Slovene language programme in the same year. School activities were partially moved to a new location in the Lanthieri Mansion in Vipava in autumn 2017.

154 students were enrolled in academic year 2016/2017, out of which 127 students in the Bachelor's programme and 27 students in the Master's programme. More new students from abroad enrolled than in the previous year. The number of Erasmus+ exchanges has also increased, while the internationalisation gained a new dimension through two students of the school going to a German company (ML Components GmbH) for their internship.

In the previous year, the curriculum of the Bachelor's programme was modernised. The new programme has more elective courses, updated content and more emphasis on information technologies due to trends of digitalisation in business and industrial companies. The Master's programme has also been modernised in a similar manner. In academic year 2016/17, the updated study programme started for the first year students of both degrees, while in the autumn 2017 also second year students were included.

The programme has until present always been implemented completely. In the academic year 2016/17, students selected Bachelor's elective courses *Entrepreneurship Seminar, Logistics, Sociology of Organisation and Business Communication*, and, for the first time, *Electronic Business*, while Master's elective courses were *Advanced Measurement Techniques, Decision support methods and systems, Business Communication Workshop, Advanced Materials, Production Information Systems* and *Knowledge Management*.



Recorded lecture with subtitles in different languages (Videolectures.net).



Presentation of individual projects – Project 2.



Lectures of Engineering Chemistry.

The School of Engineering and Management is very active in the development and introduction of new methods and information technology support for teaching. This, together with the introduction of e-learning elements contributes to the better quality and availability of courses. Moodle software is used in increasing number of courses at the School. Consequently the study activities are mitigated for those students that are active athletes or part-time employed and need flexibility in their study curriculum. A series of lectures from selected courses has been video taped in cooperation with Josef Stefan Institute, subtitled in Slovene and English language and made available to students to facilitate their study for exams. As concluded from interviews with candidates for studies and with students, these possibilities have noticeably contributed to the increased number of enrolled students.

28 students successfully finished their study at the School of Engineering and Management in year 2016. Most of the staff members were active as their supervisors. 7 graduates come from the Bachelor's programme Economics and management of production and technological systems, 7 from the Bachelor's programme Engineering and Management, first level, and 13 from the Master's programme Engineering and Management, second level. Cumulative number of the graduates of this school increased to 495 at the end of the year 2016. Their broad profile ensures an excellent employability rate that additionally increased in the last year. Taking into account the last three generations of graduates, the employability in 6 months after graduation is 87,50 %, while in one year after graduation it comes to 94,92 %. For spreading awareness among potential employers, the school has a recorded round table where successful graduates present their professional profile and working experiences. However, high employability is mostly obtained by maintaining good cooperation between the school and companies, mostly by student internships in companies. In the year 2017, students were accepted by the companies Mahle d.o.o., Rut d.o.o., Actual I.T. Koper d.d., Tekstina d.d., CIMOS d.d., Eltec Petrol d.o.o., Kolektor Sikom d.o.o., Instrumentation Technologies d.d., Gorenc – Igor Stare s.p. in Mlekarna Planika d.o.o. for their internships. The school also collaborates with Primorska Technology Park, Regional Developmental Agency of Northern Primorska and Technology Park Ljubljana in encouraging and preparing the students for entrepreneurship.

School of Science

(Dean: Prof. Dr. Samo Stanič)



Public lecture in astrophysics for high school students at School of Science open day.

Study programmes:

Bachelor's Study Programme Physics and astrophysics (First Level)

Master's Study Programme Physics and astrophysics (Second Level)

Master's Study Programme Materials Science (Second Level)

Physics addresses the phenomena in nature at its most fundamental levels on a variety of dimensional and energy scales. The goals of physics are to build on the current understanding of nature, using both experimentation and theoretical analysis, and to extend our understanding to more complicated systems, such as molecules, fluids, solids and galaxies. School of Science, supported by five research laboratories and centers of the University of Nova Gorica, provides research oriented programs »Bachelor in Physics and Astrophysics«, »Master in Physics and Astrophysics« and »Master in Materials Science«. We actively promote student creativity, originality and versatility; we consider the studies to be the competitive edge that may help our graduates in their professional careers. Our advantages are individual approach to students, international research experience, and a young, dynamic academic team.

We welcome foreign students, as all our lectures and other teaching activities are available in English. Pursuing Bachelor studies in physics and astrophysics requires no tuition for students from Slovenia, other EU member states, and countries signatories of bilateral agreements that waive tuitions in higher education (Serbia, Montenegro, Macedonia, Bosnia and Herzegovina, Kosovo and others). The school's involvement in the ERASMUS+ program provides a convenient possibility for students from Armenia, Azerbaijan, Belarus, Georgia, Moldova and Ukraine to pursue physics studies at the University of Nova Gorica. Our study programs are accredited by the Slovenian Quality Assurance Agency for Higher Education and our graduates obtain officially recognized academic degrees and diplomas, including the diploma supplement, prepared according to standards agreed to by the European Commission, the Council of Europe and UNESCO.

To provide high quality education and optimal conditions for either further studies or employment in the field of physics and astrophysics, the bachelor level program introduces general theoretical and experimental topics in a broad spectrum of physics fields, and gradually involves the students in actual research. The master level program in physics and astrophysics aims at profiling the students into narrower research fields, such as astrophysics and physics of materials, providing additional in-depth knowledge each of the modules. The students are also encouraged to become involved in international research collaborations and student exchanges with other universities and institutions. From 2018, Master program »Materials Science«, an interdisciplinary and research-oriented 2-year study program

Aleksej Jurca, freshmen year student of physics and astrophysics at the School of Science won the 2017 International Olympiad on astronomy and astrophysics.



will also be offered. The common point of all programs is scientific excellence, direct individual approach in teaching and research and collegial relations between students.

School of Science is also active in dissemination activities promoting science among the youth. It co-organizes Slovenian high-school and elementary school level competitions in astronomy, provides support to the national team at international competitions, is involved in managing the Slovenian version of the popular science »Portal to the Universe« and organizes public lectures. Our students are welcome to participate. The service they give is very rewarding, as they obtain invaluable experience with giving lectures and presenting scientific ideas to general public.

Bachelor program »Physics and astrophysics«

The duration of the bachelor program »Physics and astrophysics« is three years, requiring a total of 180 ECTS points. The courses aim to provide general theoretical and experimental knowledge in a broad spectrum of physics fields, required for research work, and to gradually involve the students in actual research. Theoretical courses are complemented with research activities in laboratories and centers of the University of Nova Gorica. Although general orientation of the program is towards astrophysics and solid state physics, it nevertheless provides a broad enough knowledge base for the graduates to be able to pursue further studies or employment in any field of physics.



School of Science actively promoted science and technical awareness between the young during Researchers night in Nova Gorica.

Master program »Physics and astrophysics«

Master studies of »Physics and astrophysics« provide specialist knowledge in the fields of astrophysics and solid state physics. The program's duration is two years and requires a total of 120 ECTS points. Student activities within research laboratories and centers of the University of Nova Gorica are the basis for their master theses, which are often published in international scientific journals. Hands-on experience in international environment and with state-of-the-art technologies is pursued to increase the competitiveness of our graduates in their further careers.

Master program »Materials Science«

Master program »Materials Science« is an interdisciplinary and research-oriented 2-year study program, requiring a total of 120 ECTS points, that will be offered from academic year 2018/2019. It is based on research excellence of the University of Nova Gorica in the fields of physics and chemistry of materials, materials characterization, as well as materials technologies and development of innovative products and services, including the protection of intellectual property.

School of Humanities

(Dean: Prof. Dr. Aleš Vaupotič)



Guest lecture on Alojz Gradnik

Study programmes:

Bachelor's Study Programme Slovene Studies (First Level)

Bachelor's Study Programme Cultural history (First Level)

(Programme directress: Prof. Dr. Petra Svoljšak)

Master's Study Programme Slovene Studies (Second Level)

Master's Study Programme Digital Humanities (Second Level)

Pedagogical Master in Slovene Studies (Second Level)

European Master in Migration and Intercultural Relations (Second Level)

(Programme directress: Prof. Dr. Marina Lukšič Hacin)

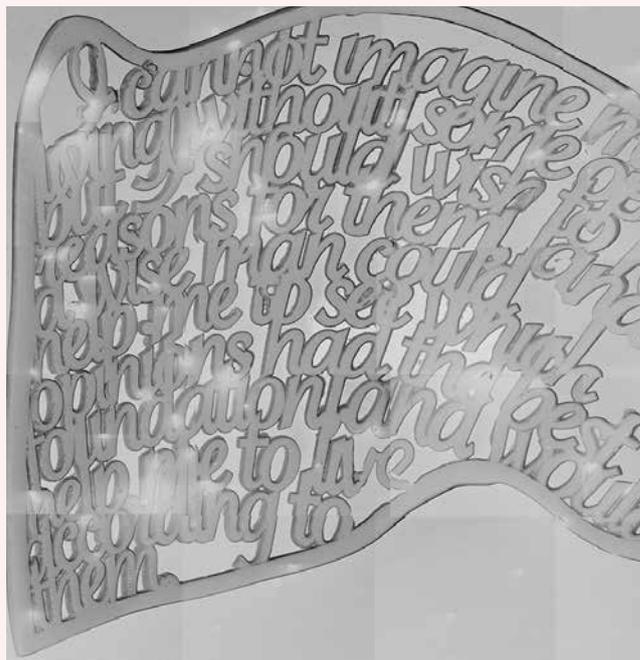
We follow the motto: "We link humanistic tradition and modern knowledge with the future in mind," at the School of Humanities. In collaboration with the Research Centre for Humanities and the Centre for Cognitive Science of language and multiple partners we link top scientific research work with teaching; this way we introduce students into research and professional practice. In 2017/2018 we conduct Pedagogical Master in Slovene Studies (second level) for the second time. We have also prepared an interdisciplinary master programme Digital Humanities, which will be implemented in the next academic year. We have been a partner in the implementation of the international study programme European Master in Migration and Intercultural Relations (Erasmus Mundus) for several years.

At the School of Humanities we offer programmes of first and second level. We enable the students of these programs to continue their studies at the University of Nova Gorica on the third level at the Graduate School, on the programs Humanities and Cognitive Science of Language.

Bachelor's study programmes (first level) are Slovene Studies and Cultural History. Study fields of Slovene Studies are linguistics, literary theory and history, the qualification title that the student acquires, is a degree in Slovene Studies (UN). We upgrade the traditional division into linguistic and literary contents with introducing the basic and elective subjects in the field of general linguistics and literary theory.

The study area of the programme of Cultural History are historical sciences, it enables the students to obtain a broad fundamental knowledge, additional attention is devoted to the specifics of the cultural and political environment in which the programme was created. The student acquires the professional title of graduate historian (UN). The director of the programme of Cultural History is Prof. Dr. Petra Svoljšak.

Programs of second level at the School of Humanities are Master of Slovene Studies - the direction of Linguistics and Literary Science -, from 2016 the new programme Pedagogical Master in Slovene Studies and international programme European Master in Migration and Intercultural Relations (Erasmus Mundus). Master of Slovene Studies (second level) introduces to all students knowledge of the Slovenian language and Slovenian literature as well as theoretical and methodological basis of literary science and linguistics. Study direction of Linguistics enables to obtain extensive fundamental knowledge in the field of the study of language, structural-theoretic, applied and interdisciplinary linguistics and other related humanistic and social sciences. Literary Studies enable to obtain a comprehensive insight into the Slovenian literature with the stressed comparative approach to the literary science. The acquired title in both programmes is Master of Slovene Studies.



3-D visualization of Middlemarch

Since 2016/2017 Pedagogical Master in Slovene Studies (second level) has been running. It links educational sciences and education of teachers, literary and linguistic sciences in the same proportion. The acquired qualification title is the Professor of Slovene Studies. The graduates are able to carry out the teaching process at the subject of Slovenian language in primary and secondary schools, teach Slovene as a second or foreign language, and deal with the complex issues of the Slovenian language and literature after their graduate.

Migrations and Intercultural Relations is an international programme that focuses on human rights, democratic values, the welfare state, the labor market and the challenges with which the Member States of the European Union as well as a global world have been facing. It is running with the support of the elite programme for international cooperation and exchange of students and teachers in higher education, Erasmus Mundus. Study areas: migration studies, history, political science, sociology, anthropology, education; Qualification title: Master of Arts in Migration and Intercultural Relations. Study is running at several universities in English language. Director of the programme is Prof. Dr. Marina Lukšič Hacin.

The interdisciplinary master's study programme Digital Humanities has been accredited in 2017, which covers fields of humanities, computing, multimedia design (in proportions of 40, 40, 20 percent). School of Humanities is also running courses of different languages, both foreign languages and Slovenian language.



Distant Reading for European Literary History

School for Viticulture and Enology

(Dean: Prof. Dr. Branka Mozetič Vodopivec)

Study programme:

Bachelor's Study Programme Viticulture and Enology (First Level)

The School of Viticulture and Enology is offering practically oriented BSc study program Viticulture and Enology, an unique interdisciplinary program in Slovenia, that integrates grape-growing, winemaking and wine marketing and is consistent with the guidelines and recommendations of the OIV for the education of Oenologists. Our lecturers are excellent experts with multidisciplinary practical and research experiences. The School for Viticulture and Enology is located in the center of vine-growing area; therefore constant integration with practical knowledge is enabled to the students and researchers. Students can gain their practical skills on our University estate as well as with respected winemakers of the local and wider area, and are also included in the ongoing university Wine Research Center projects.

School of Viticulture and Enology (SW) offers bachelor study program Viticulture and Enology. In academic year 2016/2017 the 12th generation of students has been enrolled and 5 new students graduated. At the end of 2017 we have begun accreditation process of the MSc study program of Viticulture and Enology in accordance to the new rules for accreditation, valid from August 2018. We plan also to change the status from School to Faculty for early 2018.

The BSc program is carried out in Vipava Lanthieri Mansion. Part of practical training and field teaching has been done also in the University estate in Manče, where a new 1.2





ha vineyard has been planted in 2015 (*Zelen* and *Pinela* cultivars). Practical training is an important part of our study curriculum and the students can do it also on our partner estates, cellars, wineries and wine labs as well with visits, organized as field trips to important vine-growers and winemakers in the Primorska wine region, as well as in other Slovenian and Italian trans-border wine-growing regions. Students learn about winemakers and their wines also with guided visits of Slovenian wine festivals. Special attention is given to companies that are indirectly connected with winemaking: barrel productions, winemaking/ vine-growing equipment producers, bottle corks manufacturing, wine bottles production, consulting firms, sales companies, marketing agencies and vine nurseries.

Our study program has been upgraded with new elective courses from the field of wine marketing, selling and promotion that have been offered to our students since 2016/2017. Students gain their practical skills during wine festivals presentations of University wines and our study program promotion as well. At the end of November 2017 a group of our 2nd year students visited *Slovenian Wine Festival* in Ljubljana and festival *Vinski univerzum* in which they also participated actively as wine presenters under the frame of 2017 *Lidl young winemaker* competition.

Last Thursday in May we have organized our annual, open to public *Student Wine Festival* again, this year it was the 10th. We have invited also other students from similar programs from *Croatia (Polytechnic Rijeka, department in Poreč, University of Zagreb, University of Zadar)* and

Srbija (University of Novi Sad). The visitors have again chosen the best three presenters among all students.

The recognition of our School at the national and international levels is greatly enhanced by scientific and professional contributions of Wine Research Centre members. At the end of May 2017 we have organized with Wine Research Centre 1st International Viticulture and Enology Day that was devoted to Slovenian-French partnership. The event was very well visited, thanks to great lecturers from Slovenia and France.

We have upgraded our teaching staff with two new members, professor for viticulture dr. Katja Šuklje and professor for enology, dr. Guillaume Antalick.

At the beginning of March 2017 our student Vanesa Klinec won the silver medal on the international competition of Young Wine Specialists in Agricultural Show Paris (France). She competed with 24 best students from different non-French viticulture-enology schools from all Europe in recognition and description of French wines.



In 2017 we have guested two respectable professors from France. Enology professor dr. Gilles de Revel from University of Bordeaux and viticulture professor dr. Alain Deloire from Montpellier SupAgro. We have organized also a lecture about sparkling wines production by guest lecturer Francois Botton from Laffort and Kmetije Slapšak. Dr. Šukle and Dr. Antalick were also hosted as guest professors at BOKU, Austria in May 2017.

We support every student exchange, therefore we again gladly accepted 4 new students from Lycee Bel Air (France) in the second semester for an study exchange. One of our students in the third year did the studying exchange at International Wine Business School in Geisenheim.



School of Arts

(Dean: Prof. Boštjan Potokar)



Preparations for a performance of year 1, where the students used DIY electronic wearables they produced in a workshop with the mentor - our MA graduate - Lavoslava Benčić.

Study Programmes:

Bachelor's Study Programme Digital Arts and Practices (First Level)

(Programme directress: Prof. Rene Rusljan)

Master's Study Programme Media Arts and Practices (Second Level)

(Programme directress: Prof. Rene Rusljan)

University of Nova Gorica School of Arts has been educating in the field of arts since 2009. Within the University it started functioning as a BA school and in seven years developed into a fully accredited Academy. This is the first university level academy in Slovenia in 71 years. In English it retains the naming as the *School of Arts*. BA and MA programmes cover the following fields:

- Animation (*animated film, animation in creative industries*)
- Videofilm (*fiction, documentary, experimental film, art video*)
- Photography (*author, functional*)
- New Media (*creative use of new technologies*)
- Scenographic Spaces (*film, theatre scenography*)
- Contemporary Art Practices (*combination of different media*)

After 2008, when we prepared the first study programme in the field of arts, the school saw a gradual but firm development into an art academy:

- March 2011 - The Slovenian Quality Assurance Agency (SQAA) accredits the UNG School of Arts with decision no. 6033-86/2009/8.
- September 2012 - SQAA accredits the Bachelor's programme in Digital Arts and Practices with decision no. 6033-97/2001/19.
- September 2014 - SQAA accredits the Master's programme in Media Arts and Practices with decision no. 6033-117/2013/20.
- September 2016 - the School is awarded accreditation as an Academy by the SQAA in decision no. 6032-11/2015/19. In English it retains the naming as the *School of Arts*.
- October 2016 - the University of Nova Gorica School of Arts, is written into the List of Accredited Slovenian Higher Education Institutions with the new Slovenian name Akademija umetnosti Univerze v Novi Gorici with decision no. 6033-475/2016/8 at the Ministry of Education, Science and Sport.

The Programme structure at the UNG School of Arts enables combining media and fields thereby opening a range of professional pathways, from becoming an author to developing a distinct professional identity. In 2009 we opened the Bachelor's programme in Digital Arts and Practices. Our MA programme was developed within the ADRIART EU supported project, together with partners from Croatia, Austria and Italy. As leading partner of the ADRIART project at the UNG School of Arts we were able to offer



Basics in stop motion animation workshop under mentorship of the director and producer Kolja Saksida, assistant professor.

continuing education for our BA graduates an MA programme in in 2012/13 - Media Arts and Practices, with a pilot run in that year and a full launch the following year.

In the 2016/17 study year 53 students are immatriculated at the UNG School of Arts. The students structure is international with some Italian and Croatian students already on BA level. The MA level is distinctly international as more than half of the students are foreigners. Several are from EU countries while some come from more distant parts of the world. The entire educational activity of UNG School of Arts is held at the premises of the Palazzo Alvarez in the center of Gorizia, Italy. The school occupies in total 800m2 intended exclusively for educational activities and additional 200m2 service spaces. Through various projects and co-production activities we have in recent years been able to acquire the much needed equipment for film, animation and photography production and postproduction. Students thus now have a modern studio environment where they can work throughout the day.

In addition to individual careers of mentors and other UNG School of Arts collaborators, all of whom are nationally and internationally renowned artists, a lot of energy is invested in cooperations with various festivals and other ways of presenting student work.

- At the 20th edition of the Festival of Slovenian Film we had 5 films in the competition section and two in the panorama;
- At the MFRU International festival of computer arts in Maribor the project "ōō" by MA student Miha Godec was awarded with one of four scholarships;
- *Scarecrow cross*, a film by our MA student Sandra Jovanovska was shown at the Jacksonville Documentary Film Festival in Florida, USA;
- In Maribor at the 6th DOCUDOK Festival of Documentary film the graduate film "*Rejects of the second generation – Following the Traces of Punk*" by Dunja Danial was chosen for the competition section;
- At the 16th Cinedays Festival of European Film in Skopje nine films by our students

were shown in the student competition section, among ten European universities as the only Slovenian academy;

- At the 8th International Festival of New Media Culture Speculum Artium in Trbovlje MA student Miha Godec presented his awarded project;
- For the fourth time we have collaborated successfully with the Taiwanese Cinemasports International Festival of a 24-hour film production. This year four films by our students have been shown in selection.
- Two films by our students were shown at the FESA Festival of European Student Animation in Belgrade, Serbia;
- As previously also this year our students collaborated at the Pixelpoint New Media Festival in Nova Gorica;
- At the ANIMATEKA International Festival of Animated Film in Ljubljana University of Nova Gorica has, together with University of Ljubljana, sponsored an »Young Talent Award« for the best European student film. One film was chosen for the competition and four in the Panorama section.

Film workshop with a focus on the technical aspects such as camera, lights, sound.



We believe our most important showcase are our students and graduates – their products are valued high enough by professionals to represent Slovenia at diverse exhibitions, festivals and selections around the globe.

Graduate School

(Dean: Prof. dr. Iztok Arčon)



Facing challenges of the world heritage.

Graduate School hosts and carries out all UNG's doctoral study programmes (third level), regardless of their scientific discipline. Such a closely knit and homogeneous organization of graduate school proved to be very effective, enabling high effectiveness and interdisciplinarity in designing individual doctoral study programmes. Students are also allowed to perform part of their study obligations in related study programmes at other universities in Slovenia and abroad, which encourages the mobility of students. In this way, each student's programme can be designed on an individual basis.

All study programmes are internationally oriented and closely linked to UNG's research units, and to other research institutions in Slovenia and abroad, where graduate students can conduct their research work required and can participate in international research projects. Among many external partners we should point out those with which we have established long term collaborations. The programme Karstology is carried out in close association with the Karst Research Institute of the Centre for Scientific Research of the Slovene Academy of Sciences and Arts. The links between the two institutions were further strengthened in 2014 with the establishment of the UNESCO Chair on Karst Education at UNG. Doctoral programme ETCAEH, which includes a one-year specialization (second-level Master) programme, is implemented in close cooperation with Università IUAV di Venezia. In 2017 we have signed the agreement with IUAV for joint supervision of the doctoral thesis and awarding of the double doctoral diploma. We closely collaborate also with

Study Programmes:

Doctoral Study Programme Environmental Sciences

(Programme director: Prof. Dr. Anton Brancelj)

Doctoral Study Programme Karstology

(Programme director: Prof. Dr. Martin Knez)

Doctoral Study Programme Physics

(Programme directress: Doc. Dr. Sandra Gardonio)

Doctoral Study Programme Humanities

(Programme directress: Doc. Dr. Ana Toroš)

Doctoral Study Programme Economics and Techniques for the Conservation of the Architectural and Environmental Heritage

(Programme directress: Prof. Dr. Saša Dobričič)

Doctoral Study Programme Molecular Genetics and Biotechnology graduate study programme

(Programme directress: Doc. Dr. Martina Bergant Marušič)

Doctoral Study Programme Cognitive Science of Language

(Programme director: Prof. Dr. Artur Stepanov)

Graduate School hosts and carries out all UNG's doctoral study programmes (third level), regardless of their scientific discipline. All study programmes are internationally orientated and closely linked to UNG's research laboratories and centres, and to other research institutions in Slovenia and abroad, which enables graduate students to conduct their research work required by their studies and to participate in international research activities and projects.



Research of Karst by the river Čuja, South Siberia, Republic Altaj, Russia.

University of Naples Federico II, and obtained in 2017 a common EU Horizon H2020 project. Doctoral programme Molecular Genetics and Biotechnology is carried out in collaboration with the International Centre for Genetic Engineering and Biotechnology (ICGEB) from Trieste, Italy.

We continuously improve and upgrade all our doctoral programs, to guarantee the quality and topicality of the contents and teaching methods, and to provided doctoral students necessary up-to-date knowledge and skills for solving new challenges in science. In 2017 we have extended the duration of all our doctoral programs from three (180ECTS) to four years (240 ECTS), since the experiences in last years showed that three years period of study is too short to perform and finish a good quality doctoral research work.

The interest in the doctoral programmes is high. In 2016/2017 there were a total of 79 students enrolled in all doctoral programmes, of which more than half (57%) were foreign students. The proportion of foreign students is still increasing and reached 68% in 2017/2018. Number of international student exchanges and number of foreign visiting professors is also very high. The language of dissertation is English, to ensure that all doctoral students gain necessary language competences, to be able to present sovereignly and independently their research results to international audience in English. Internationalisation of doctoral studies remains one of the central strategic directions of graduate school also in the future.

Implementation of doctoral study programmes is financed through tuition fees. Premises and equipment for the implementation of graduate study programmes are adequate. Director with Scientific Board of the programme is the expert head of an individual programme. All programmes are conducted successfully, in a high-quality manner and effectively, which is visible in the success of students in their studies and individual research work. In 2016/2017, UNG promoted 13 new doctors of science. The committee for the assessment of doctoral dissertation always includes at least one member from a foreign university to assure that the quality of doctoral degrees is comparable to international standards.

The quality of graduate studies is reflected in successful defences of high-quality doctoral theses, and in numerous publications of student research results in reputable international scientific journals: 86 scientific and professional articles, 108 papers and published proceedings from conferences, and 32 other scientific publications in the academic year of 2016/17.

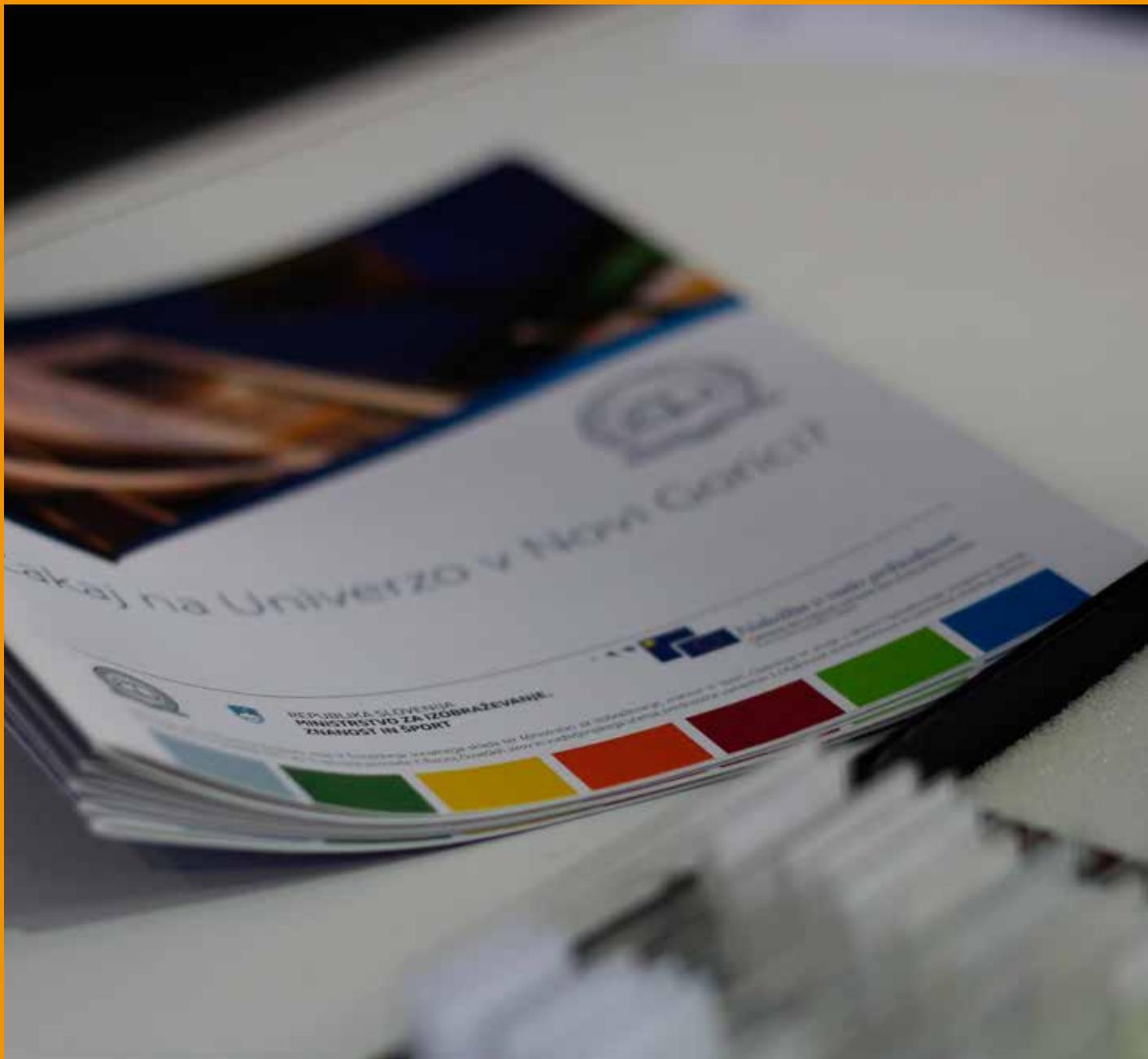


Planet of cells J744.2 (200 x magnification, optical microscope).



Other Activities

For the researchers, students, and general public, all the professional (research) and study literature is available at the very modern *University Library*, while the *Publisher of UNG* is in charge of the publication of text books, lecture notes, collections of scientific papers and other works. The university also has a *Student Office* that helps both undergraduate and graduate students, as well as all those interested in obtaining information about the study at the UNG. The *International Office* is there for coordinating international projects, and the *Project Office* gives administrative support for carrying out international projects. Apart from that, the University of Nova Gorica also has a *Career Center* that creates a link between the university, the students and potential employers. Lastly, there the *Alumni Club* that joins alumni from all generations of graduates, of both graduate and undergraduate programs. It basically connects all individuals who have contributed in any way to the development of the University of Nova Gorica.



University Library

(Head: Vanesa Valentinčič Murovec)



Library collection is almost completely open access and organized by UDC classification. We offer on-line searches from databases and through interlibrary loan we provide material that is not in our collection. We provide bibliographic service for our researchers and other institutions. The library is full member of the Slovene library co-operative online bibliographic system & service, COBISS. Through our website we offer e-learning of search skills we also provide information literacy courses. The library is open 48 hours a week. Users can use a reading room with 50 reading places, and computer room with 8 computers, and there is option to connect your own computer for easier access to electronic materials, archives and databases. In 2017, we started to use new software for loan Cobiss3. We perform an inventory of all book materials and were satisfied with the results. Repository of the University of Nova Gorica, RUNG is one of the Open Science Slovenia portal "openaccess.si" partners. Book collection was enriched by the gifts of individuals and other libraries.

University library of University of Nova Gorica is open to all students and staff, as well as to all other visitors who are interested in the materials offered by the library. We collect material from all areas of science, mostly for educational and research activities of UNG.

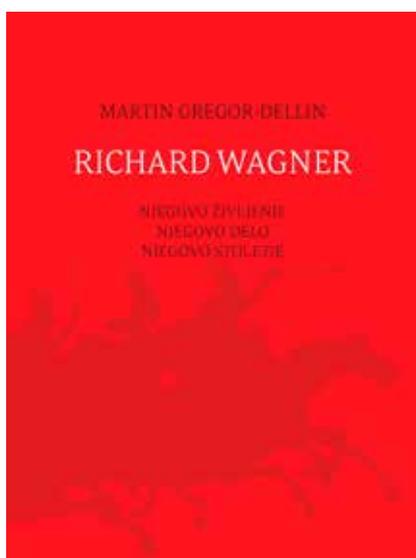
Library collection includes more than 20.700 book titles, 70 titles of periodicals, 580 items of non-book materials and e-edition of scientific journals, reachable over services like ScienceDirect, Springer Link, APS Journals, EIFL Direct, ACS Publications and JSTOR. Our users can access databases such as Web of Science, Scopus, MathSciNet etc.

Publisher of UNG

(Head: Mirjana Frelj)

University of Nova Gorica started its publishing activity in 2001. We publish textbooks and study materials for the academic courses available at our institution, as well as research and scientific works. Publishing is regulated by the Rules of publishing activities, for quality is responsible Commission for publishing.

So far, we have published 39 publications. Among them there are teaching materials with instructions for exercises for undergraduate students of the University of Nova Gorica, university textbooks for students and professors, conference proceedings, scientific and other monographs.



In 2017 we published two scientific monographs in electronic form under the Creative Commons license on our web page. The first one »Literarna ustvarjalka v očeh druge_ga« by Katja Mihurko Poniž was financially supported by Slovenian Research Agency, the second one »Reception of Foreign Women Writers in the Slovenian Literary System of the Long 19th Century« by Tanja Badalič, Katja Mihurko Poniž and Aleš Vaupotič was published in English as a result of HERA Joint Research Programme. We also published in printed form the first Slovenian translation of biography »Richard Wagner. Njegovo življenje. Njegovo delo. Njegovo stoletje by Martin Gregor Dellin« translated by Simon Širca.

Student Office

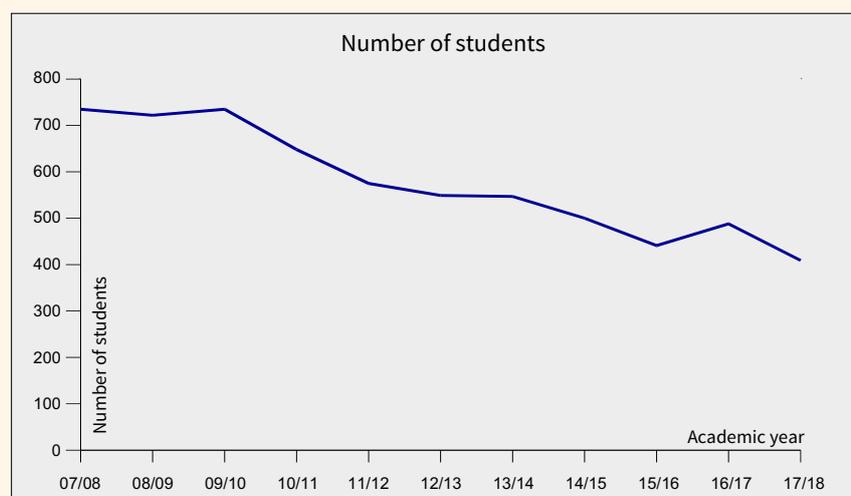
(Head: Renata Kop)

Student Office of University of Nova Gorica was founded in year 2002 and serves both undergraduate and postgraduate students as well as those interested in information about the studies at our institution. The objective of the Student Office is to support students and candidates for study in academic and extracurricular activities. The Student Office has an office available in Nova Gorica and in Vipava. Part of the Student Office is also Higher Education Application-Information Service, which was founded in year 2007.

Student Office offers information about enrolment, conditions for enrolment, information about academic programmes, and other information concerning studies at University of Nova Gorica; arranges application and selection procedures and organizes and implements call for enrolment, application and enrolment processes; issues certificates and prepares diploma papers; manages and regulates student databases; processes and analyzes students data; assists in finding accommodation; manages the processes and prepares decisions of recognition of education for the purpose of access to education.

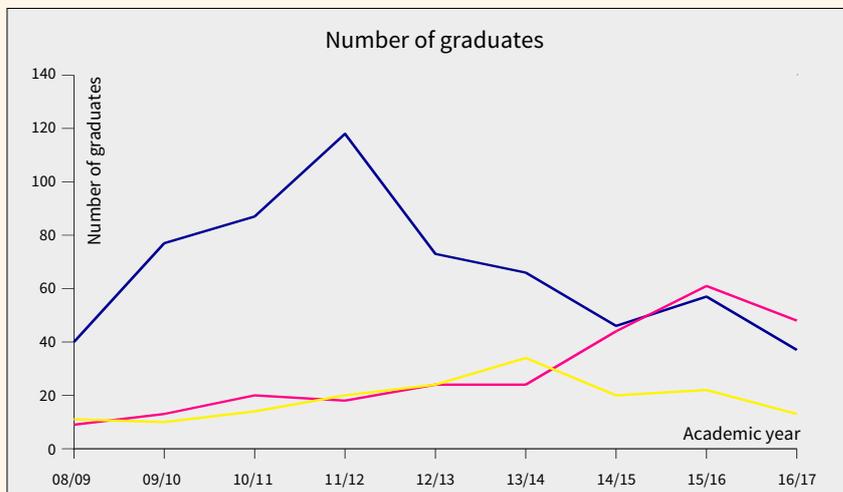
In the academic year 2017/2018 we enrolled 409 students, 226 students on first level study programmes, 117 students on second level study programmes and 66 students on third level study programmes.

The number of students falls slightly, which coincides with generation decreasing.

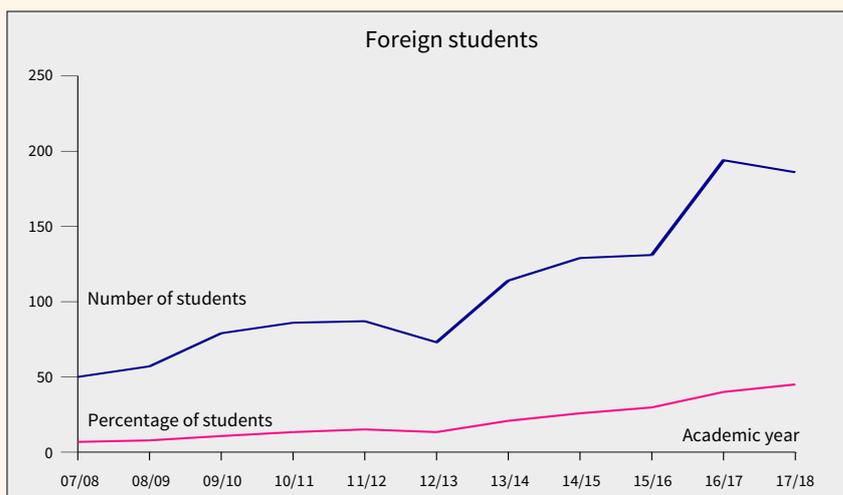


Number of graduates by level of programme in academic year 2016/2017:

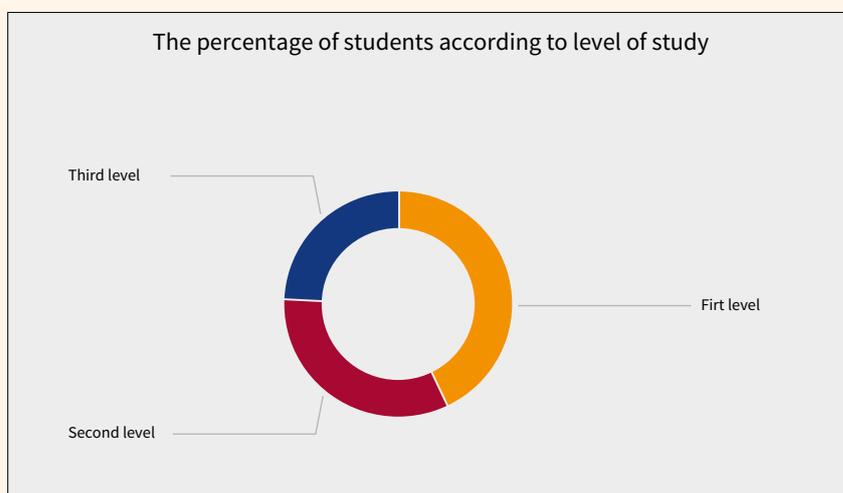
- 37 on bachelor's study programmes,
- 48 on master's study programmes,
- 13 on doctorate's study programmes.



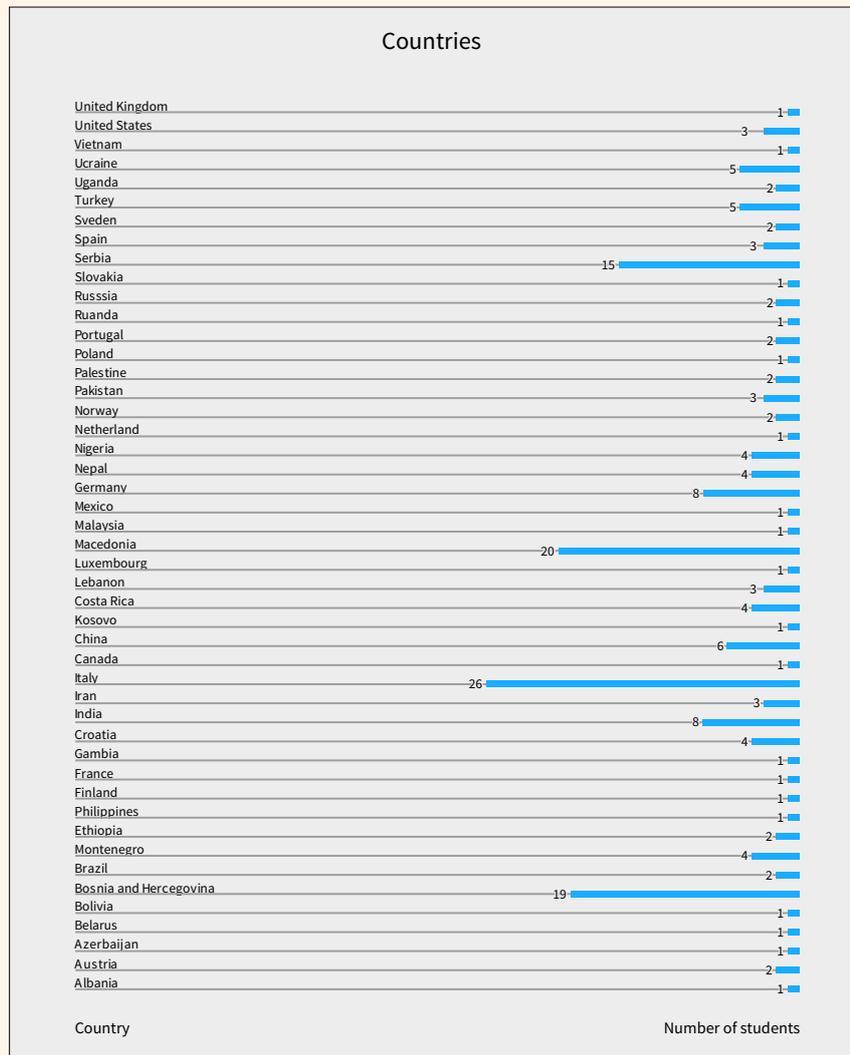
The number of foreign students in academic year 2017/2018 decreased compared to academic year 2016/2017, but the percentage of foreign students according to the total number of students is the highest in the observed period.



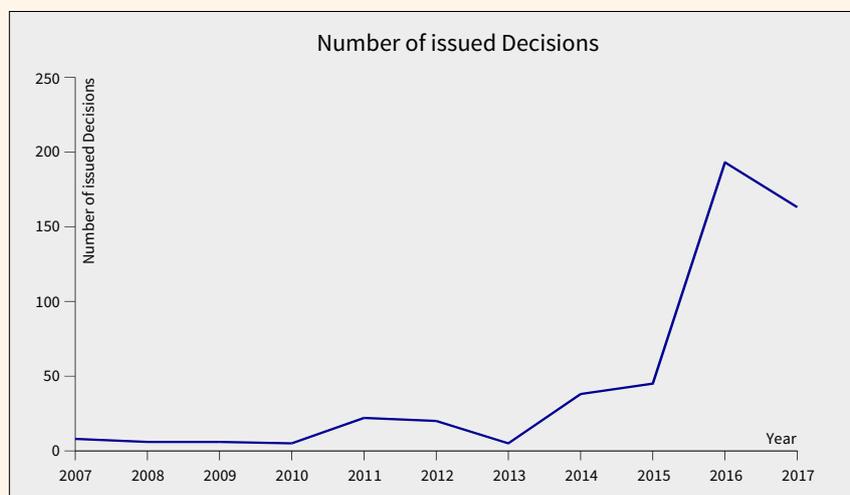
The majority of foreign students in academic year 2017/2018 study on bachelor's (first level) study programmes, in particular on Bachelor's study programme Engineering and Management (first level).



In academic year 2017/2018 foreign students come from 47 different countries:



The Student Office completed 163 processes of recognition of education for the purpose of access to education and issued 92 positive decisions in year 2017.



Project Office

(Head: Aljaž Rener)

Project office of UNG is providing administrative support of international research project's implementation. It involves two people (head of project office and project coordinator).

The Office ensures support to the researcher and other employees also in the process of project proposal preparation and application. The support is focused on financial, administrative and legal aspects of proposal applications. The Office is monitoring relevant open calls and is frequently informing UNG staff about funding possibilities.

Work in the office in 2017 was focused on supporting applications of proposals to the calls of the financial period 2014-2020 and on the activities related to the start of implementation of newly confirmed projects. From October to December we were implementing a new information system for reporting eMA that replaced the old information system ISARR (registration of digital certificate, preparation of different applications, activation and training)

In 2017 we have participated in preparation of project applications for 14 project proposals within the following programs:

- INTERREG CENTRAL EUROPE (1 application)
- ERA NET TRANSCAN (1 application)
- HORIZONT 2020 (10 application)
- INTERREG EUROPE (1 application)
- Other (1 application)

Head of the office attended a meeting of project URBINAT partners in Porto, Portugal, together with the representative of ETKAKD. The meeting was attended by 38 representatives of all project partners from Europe, Africa and Asia. Project proposal successfully passed first phase of evaluation. Therefore, partners met to discuss the final application to the second phase of the call. At the end of the year we were informed that the project has successfully passed the evaluation and was recommended for financing.

In 2017 we have started the implementation of nine newly confirmed projects. Project office supported them from administrative point of view:

- Biological remediation of water contaminated with heavy metals (Call of MIZŠ Researchers at the beginning of their careers 2.0)
- Metalization of polymer surfaces using algae (Call of MIZŠ Researchers at the beginning of their careers 2.0)
- EnViRoS – Opportunities for environmentally friendly viticulture: optimization of irrigation and introduction of new genotypes of wines (ERA-NET ARIMNET2)
- EcoLamb - Holistic Production to Reduce the Ecological Footprint of Meat (ERA-NET SUSAN)
- CLIC - Circular models Leveraging Investments in Cultural heritage adaptive reuse (Horizon 2020)
- RETINA - Opening research laboratories to innovative industrial applications (INTERREG V-A Slovenija – Avstrija)
- AGROTUR II - Sustainable development of agriculture and tourism on crossborder Kras (INTERREG V-A Slovenija – Italija)
- EDUKA2 – Crossborder management of education (INTERREG V-A Slovenija – Italija)
- MEMORI-NET - Network for Mental Rehabilitation and Motors of the Ictus (INTERREG V-A Slovenija – Italija)

International Office

(Head: Sabina Zelinšček)



The University of Nova Gorica regularly cooperates with many foreign institutions. In 2017, it has signed 50 general cooperation agreements and 74 Erasmus + inter-institutional agreements with institutions from different countries.

The University of Nova Gorica has actively participated in programs that support international mobility and interinstitutional projects in the field of education and training. In 2017, 115 exchanges were realised in the context of different collaborations and projects. The International Office provided all required information and support to the participants before, during and after mobility.



During the year, the International Office promoted the mobility programmes and projects and presented its positive results in many informative workshops and in a panel discussion entitled "Study abroad, why participate in student exchange programs or study abroad?" that took place during the University Week.

Career Center

(Head: Nives Štefančič)

Activities in 2017:

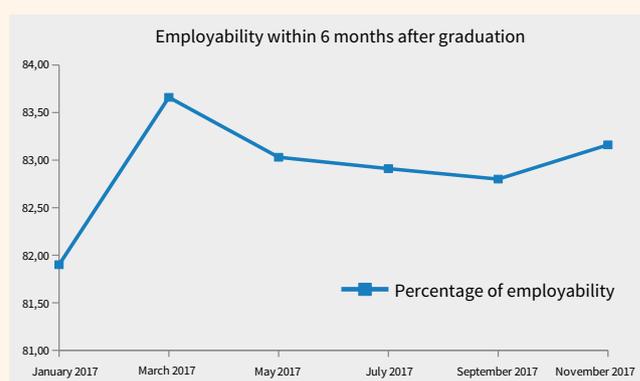
Activities in the context of practical training; Participation in the presentations of interim reports of the practical training of students of School of Engineering and Management in companies RUT d.o.o., Mahle Letrika d.o.o., Eltec Petrol d.o.o., Gorenc - Igor Stare s.p., Kolektor Sikom d.o.o., Mlekarna Planika d.o.o., Cimos d.d., Actual I.T. Koper d.d., Tekstina d.d., Instrumentation Technologies d.d. and Antigona d.o.o.

Contacts with employers; 12 meetings with employers - participation in the presentations of interim reports of the practical training of students of School of Engineering and Management.

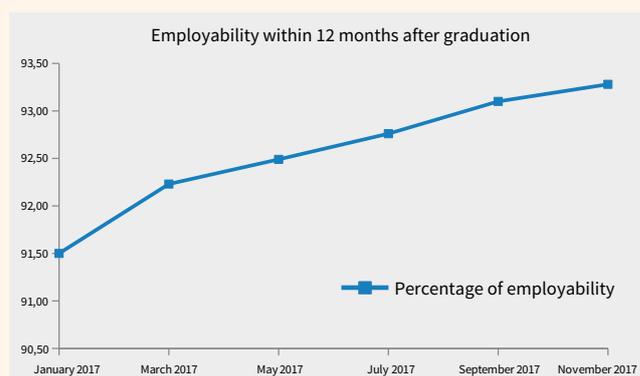
Promoting the University and Career Center; at Informativa 2017, Info. days for 1st and 2nd level study in February 2017, at the regional job fair in Nova Gorica. Coordination of info. days in May and June 2017 for 1st, 2nd and 3rd level study programs. In October the Career Center, in cooperation with other career centers of higher education institutions, conducted a presentation of good practices at a conference organized by the Ministry of education, science and sport "Cooperation of the economy and higher education: for higher quality study programs." In November 2017 the Career Center took part in the Info. Day "Choose Your Study" in the organisation of VIRS - Primorska.

Education; participation in training and workshops with other representatives of career centers of higher education institutions (Leadership and preparation of an evaluation center, Leading an consulting interview, two-day meeting - exchange of good practices).

Informing students and graduates of suitable job vacancies, internships, current events, tenders; published over 110 job vacancies, which correspond to profiles of UNG graduates. More than 10 invitations to the events organized by the Primorska Technology Park (PTP) were published, i.e. Business Meetups and other events. We released 6 career news, sent to 541 e-mail addresses of students and graduates.



Periodically checking the employability of graduates for six months and one year after graduation; in January 2017, March 2017, May 2017, July 2017, September 2017 and November 2017.



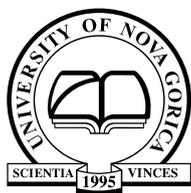
Alumni Club

(Head: Nives Štefančič)



Alumni Club of the University of Nova Gorica in 2017 continued with activities to increase connection between University and Alumni:

- We upgraded informations about Alumni and informed them about activities of Alumni Club.
- We invited them to become promotor within their schools, at variety promotional events.
- We informed Alumni about scholarships, competitions, opportunities for postgraduate studies at home and abroad.
- We informed them about the possibility of acquiring the Diners Club FUNG Card.
- We informed them about job vacancies and events organized by the Primorski tehnološki park.
- We invited them to different events of the University of Nova Gorica (scientific evenings, information days, University of Nova Gorica week, semester and annual exhibitions, student wine festival).
- We published Alumni News, in February and June 2017.



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