



# ASSOCIATION OF CHEMISTRY AND THE ENVIRONMENT

Newsletter 2021

*edited by Branimir Jovančičević*

## Contents of this issue:

COVID-19 pandemic year behind us

- 1) Albert Lebedev and Dmitrii Mazur, **Russia – Lomonosov Moscow State University**
- 2) Núria Fiol Santalo, **University of Girona, Spain**
- 3) Juan Francisco Facetti, **Faculty of Engineering- Universidad Nacional de Asuncion Paraguay**
- 4) Branimir Jovančičević, **University of Belgrade, Faculty of Chemistry, Serbia**
- 5) Anne-Marie Delort, **Institute of Chemistry of Clermont-Ferrand, Université Clermont Auvergne-CNRS, France**
- 6) Polonca Trebše, **University of Ljubljana, Slovenia**
- 7) Nuno Ratola, **Faculty of Engineering of the University of Porto (FEUP), Portugal**
- 8) Malgorzata Iwona Szykowska-Jozwik, **Lodz University of Technology, Faculty of Chemistry, Lodz, Poland**
- 9) Jan Schwarzbauer, **Institute of Geology and Geochemistry of Petroleum and Coal, RWTH, Aachen University, Germany**

*I guess no one expected something like this. The virus has cut us off in many of our activities. Our lives have changed completely. Nothing is as it used to be. We all have a desire for this to end as soon as possible.*

*The members of the Association of Chemistry and the Environment Board briefly described what the pandemic year behind us looked like, with great hope that the year ahead will be different and better. Together, we want these texts in the News Letter to remain just a testimony to an unusual event.*



1) Albert Lebedev and Dmitrii Mazur,  
**Lomonosov Moscow State University, Russia**

The COVID-19 pandemic was a big surprise for educational system as well as for all other areas. At 20<sup>th</sup> of March 2020 Chemistry Department of Moscow State University decided to cancel all classes and transfer them in the online format. Online education system wasn't prepared, so everyone worked at different platforms (Zoom, BigBlueButton, Discord etc.). Giving the lectures seemed fine at first, but many lecturers noticed loss of feeling of students being present. Many students took this situation as a chance to relax being present at the class. The seminars tended having a closer communication with the students, but technical problems (lack of computers, cameras and other devices) at both sides made the process going quite hard. It took a lot of efforts to convert all the materials teachers had into electronic format (presentations, images). And even though it wasn't enough, since doing organic chemistry requires a lot of structure writing. Performing a quiz or colloquium was also a big challenge due to absence of possibility to check the students. From one hand a teacher wanted to control the student avoiding cheating, but from the other hand we didn't

have a moral right to interfere into the student's personal and family life. All this let us come to very doubtful results at the end of summer session of 2020. Moreover, many students were left with unfinished program of laboratory practice classes. Finally, some teachers have recorded a video of the experiments and allowed the students to analyze them and answer the questions. The autumn semester was more inspiring, since many lessons from spring 2020 were learned. Beginning from September all classes except laboratory practice classes were moved to on-line format. The most efforts were focused to run the laboratory classes as fast as possible, feeling the upcoming second wave of pandemic. Such approach allowed finishing the laboratory practice program earlier and focusing on seminars. At the end we have found a way to continue teaching the students under conditions of pandemic, but the absence of direct eye-to-eye contact between a student and a teacher significantly decreased the overall quality of education. From my personal point of view, I should mention that it is very sad to give a lecture without viewing the eyes of the students and without feeling their reactions. You do not understand did they grasp your ideas or not. Quite interesting was the exam. I have sent individual tasks to each of 72 students and in an hour got their answers (in written). Everyone had an excellent answer. Surely having at hand all the literature and materials of my lectures it was not difficult to find correct answers. Anyway, they knew where to find these answers. So best marks to everybody.

Department of chemistry was completely closed between April and September. I could once a week visit the lab as the head, but nobody else. So, communication was limited to Skype. No new experiments, no new results. Happily, our colleagues at the Arkhangelsk State university having their laboratory cottage in their full possession did not close it at all. Thus, we managed to transfer at least a portion of our experiments to their facility. On the other hand, all of them (100%) had Covid in September-November 2020.

In March 2021 situation is still the same. Only practical course goes in normal way. All lecturing is on-line.

2) Núria Fiol Santalo, <b>University of Girona, Spain</b>
---

On March 13, the Spanish president reported that, to manage the public health crisis of COVID-19, the state of emergency in Spain would begin on March 15 for a maximum period of 15 days. This state of emergency included the total closure of the University. Therefore, we had two days to access

our labs to stop the experiments that were in progress and to collect teaching material for continuing our lessons during these weeks. 2 weeks later, the state of emergency was extended and only projects related to COVID-19 or human health could restart. In our case, we were not allowed to access the faculty and restart the research activities until September 2020. So, we suspended almost six months the research activity in our laboratories. The most affected by this closure were pre-doc and post-doc researchers who were unable to advance their experimental research. For them, the University of Girona made an automatic extension of 91 days of their contracts and submission deadlines to compensate, to some extent, the interruption of their research activities.



*The campus: empty during the lockdown and now (April 2021).*

Regarding teaching activities with students, lessons continued, adapted to on-line format. At the beginning it was very stressful as we had to adapt, without much knowledge, to the virtual lessons and meetings, using the different digital platforms, and with the equipment we had at home: no webcam, recording system, microphone or pen display, .. these devices were not always available at the beginning of the lockdown. Later, the on-line lessons became more comfortable and even preferred by some students and professors.

In September 2020, different scenarios were planned to decrease the on-line lessons and increase the presence of students at class. Nevertheless, the most restrictive scenario is still the one used, and is not going to change during this academic year. Only laboratory classes with a reduced number of students are allowed, and everybody must be protected with a lab coat, gloves, FFP2 mask and face screen.

This small number of students would, theoretically, improve the student-teacher contact but the use of these protections is so uncomfortable that everyone wants to finish ASAP.

The return of professors to university faculties has not been complete. Many professors over the age of 60 are considered at risk and are not allowed to interact directly with other professors or students. Thus, a significant number of university professors have not yet regained their normal teaching and research activity. Obviously, a long-distance relationship for more than a year is exhausting and some of them are considering a pre-retirement.

What I would like to highlight is the emptiness in life on campus and in the faculties of the UdG. Students, researchers and administrative staff are allowed access to the buildings up to three days a week. However, groups of students are not allowed indoors or outdoors, offices and labs could not be shared, bars and picnic areas are closed, classrooms are closed or almost empty, ... For all of this, the university campus is now so silent that, sometimes, it makes me feel sad.

3) Juan Francisco Facetti,  
**Faculty of Engineering- Universidad Nacional de Asuncion Paraguay**

Innovation and research are definitely affected. Those research units with more budget are less affected. Others do not.

In Paraguay, recently, the research budget has increased based on royalties from energy exports and largely on contributions from taxpayers. The decrease in income due to the downturn in the economy (because the pandemic) will be a major factor affecting the research budget.

On the other hand, the first phase of the quarantine (March to June 2020) has prevented the researchers the entry to the laboratories, the mobility of researchers to comply with the monitoring schedules and, above all, has prevented us from sending various types of environmental samples to laboratories in Europe and South America with which we work. The decrease in commercial flights that also transport cargo, has greatly affected the supply of inputs for laboratories, for example, certified reference materials, special reagents and also the mobility of researchers.

The exchange of researchers and young students of the master or doctorate has been interrupted. The borders have been closed for 14 months and it is not in sight that we will return to normality until the first quarter of 2022.

It is also important to mention that the results of the research work, before the pandemic, were highly socialized with the lawmakers at the national and municipal level in order to adopt and adapt the environmental and health regulations. In other words, the science / public policy interface has been greatly affected. This situation has impeded the fluid exchange that previously existed between researchers and lawmakers.

Briefly, the pandemic has affected the dynamics, the supply of reagents, enzymes, markers, radioisotopes with short life, and other analytical supplies, and the outcomes delivery schedules, which will logically also affect the publication of the results.

Of course one aspect that should also be mentioned is the question of research priorities. The National Council for Science and Technology has reprogrammed the priorities, allocating an important part of the national research budget to the health area linked to the fight against the pandemic. It is expected that this decision (allocation of funds) will be accentuated in the next three years and logically some areas will lower their rating in the priority ranking of research.

Finally, one aspect that really concerns us, the heads of research teams, is the level of capacities and skills of those young master's students that we will receive in two or three years from now, who had to follow their bachelor's courses in a "theoretical format", almost without doing any laboratory and field work or very limited one. That will be a real challenge we will have to face, and that will most likely affect the quality of the research.

4) Branimir Jovančičević,  
**University of Belgrade, Faculty of Chemistry, Serbia**

The onset of the pandemic caught me at Humboldt's research stay in Aachen. It was clear that the continuation of the planned activities was impossible in the new situation. I agreed with Professor Schwarzbauer to end my stay. On March 16, 2020, I returned to Serbia by plane. The car remained in the garage of my friend Dr. Srećko Stopić in Aachen until mid-June of that year.

A state of emergency has already been declared in Serbia. I spent the period until the middle of May in my weekend house on the mountain Zlatibor (Bele Zemlje), with my daughter Ivan and my wife Milica. This is my hometown. From there, I gave *online* lectures to students and rearranged

presentations for lectures in Industrial Chemistry and Organic Pollutants. However, I spent most of my time working around the house and yard (see picture).

The middle of May gave a hint that the situation is calming down. Almost all my associates returned to the Faculty. The research group I lead is very numerous. At the Faculty of Chemistry and the Institute of Chemistry, Technology and Metallurgy, it has about 20 members. Fifteen of them are doctors of science. Research activities continued. Numerous B.Sc., M.Sc. and Ph.d. students. The labs have come to life. Optimism is back. However, to my great regret, we still had to make a decision to postpone the EMEC conference, which was supposed to take place in the first week of December 2020 in Novi Sad.



*It was a great opportunity to tidy up the house and the yard  
(Bele Zemlje, Zlatibor, Serbia, May 2020).*

At the end of June, after the parliamentary elections in Serbia, the corona returned in full force. I got sick with the covid 19 virus, and I spent the whole month in July in the hospital. In the first week of my stay, I was also life-threatening. Thank you Polonca Trebše for the daily calls from Slovenia and the great care she showed for my health and for my life.



I spent August in my weekend house on the mountain, and in rehab from very severe pneumonia. September reawakened hope. However, from October until today, the crisis has been constant. We have a work permit from home. A small number of researchers and professors (including myself) come to the Faculty. A special check system is waiting for us at the entrance (see picture). However, there are no conditions for normal work. This semester we are holding accelerated *online* lectures. The idea is to finish them by the end of April, and then, if the conditions allow, we would only do laboratory exercises with the student by the end of the semester (mid-June). It was the other way around last semester. We started with exercises, and from the beginning of November we held online lectures. On that occasion, prof. Jan Schwarzbauer gave several hours of lectures to my students on organic pollutants in river sediments via zoom in two terms. Since about two years ago, Jan has been a visiting professor at the University of Belgrade.



*Strict control measures at the entrance to the building  
(University of Belgrade, Faculty of Chemistry, Serbia, April 2021).*

This situation is conducive to writing papers. There are fewer experiments, but old results are processed and publications are prepared. We also work a lot on preparing applications for various domestic and international calls. The wait is longer than usual for answers.



In the meantime, more than half of my co-workers have been infected with the virus. They were not life-threatening.

The vaccination process in Serbia is in a hurry. At the Faculty, almost all of us received vaccines. However, despite this, many are afraid to come to the Faculty. The fear is great for some. Not with some of my other associates. It is all normal and natural.

Infectious disease specialists are announcing a relatively quiet month in May and June. But who knows what it will be like.

5) Anne-Marie Delort,  
**Institute of Chemistry of Clermont-Ferrand, Université Clermont Auvergne-  
CNRS, France**

In France we were told the 16<sup>th</sup> of March 2020 that the lock-down due to the COVID-19 was going to start on the 17<sup>th</sup> of March... this meant that the laboratory will be closed as well as the university for teaching...so it was a rush to collect all our data, papers, computer, to be able to work at home, I also bought a printer to be completely autonomous. Officially it was closed for one month but I was prepared for at least two months as we know that a long time is necessary to stop pandemia.

New rules were also applied for our everyday life: we were only allowed to go out for buying food, going to the pharmacy or doctor, or for walking, running or cycling during 1 hour each day and at a maximum distance of 1 km, no visit to friends or family.

Very rapidly I understood that I had to organize my life in a very strict way to keep motivation, mental and physical health. So to the contrary of my usual life, I fixed rather strict working times and life style: work from 9 am to 6.30 pm with a break at lunch time, then one hour running or walking every day, shopping once a week. For the week ends working time was replaced by reading, gardening, listening to music ... A kind of routine that finally lasted for three months, I was not used to that and I learnt a lot from that complete lock-down period.

Considering work conditions, I rather enjoyed the first month away from the lab as it was quiet, not many meetings and a lot of time to read literature and write papers: good time for research! Then started the "ZOOM time"... and hours in front of a screen, with this strange feeling that you exchange with people and at the same time there are not there...and you realize that real contact is absolutely

necessary. And with time you miss more and more this physical contact, you miss also informal information, coffee breaks together... You feel that you slowly disconnect to your team and laboratory community. Then also started the cancelation of conferences, meetings in France and abroad...and a bit later the new area of “on line conferences”. Although these virtual exchanges were much better than nothing, again we realized that they cannot replace “on site “conferences.

In mid-May the complete lock-down ended, we were allowed to move up to 100 km from home and also to come from time to time to the lab (30%), at the end of June we were free to move everywhere and be in the lab 50% of the time. This was a time of “hope”, I remember the first week-end when I could go hiking in the mountains, with such a feeling of freedom, also such a joy to see my grandchildren again!! We all thought that it will be the end of this pandemia and that we shall be able to recover a normal life and working conditions by the end of December.



*My first week-end of freedom, hiking in the mountains of Auvergne, 24 may 2020.*

However, a new peak in the pandemia occurred and new restrictions were established the 1<sup>st</sup> of November: closing of bars, restaurants, cinemas ... curfew time was at 8 pm and then moved to 6 pm, but schools staid open and our lab conditions (presence of 50% maximum) were kept. This situation lasted until the recent third peak of pandemia when additional restrictions started the 5<sup>th</sup> of April 2021: mobility of 10 kms only from your house, curfew time is at 7 pm, schools and non-essential shops closed for a least three weeks. At the same time vaccination has started slowly and for elder people in

January and February, and accelerating now for others. Actually this long period from November 2020 to now (April 2021) is difficult to describe. For every-day life it is not as strict as the very first lock-down and there is the perspective of the vaccination, however this long period seems a “never-ending” one and most of the people are depressed. For working conditions nothing is really new except that it is more and more difficult to accept this “virtual research style”, everything is functioning but in a “degraded” way, and nobody knows when normal time will come back.

To conclude, I would say that the very great change in my behavior is that I do not make any definitive plans, I adapt my personal and professional life every day, this is the only way to keep my mental health and optimism.

6) Polonca Trebše, <b>University of Ljubljana, Slovenia</b>
---

### **How did I face Covid-19?**

We were all under the great influence of last EMEC conference, which was held in Lodz, Poland, when the information about the spread of the virus Covid-19 was becoming more and more serious.

The situation in Slovenia became more serious in the beginning of March 2020. On Monday, March 6<sup>th</sup>, during my lecture on Faculty, a woman from the student office appeared at the door of the classroom with the notice to end the lecture and start with virtual lessons.

I was really shocked since nobody expected such a grave decision. We still felt safe, in spite of the fact that there were several cases of infection already detected in Slovenia and a few people were also hospitalised. We hoped to continue with laboratory work at least, but we were advised to stay at home. I was worried because within the next week I expected Albert’s student Elena from Moscow to come to work with us and at that moment we had to cancel her visit.

Practically through the night we have changed our daily routine, starting with virtual work since the main faculty building was closed, meaning no research work could be performed.

After a couple of weeks of not knowing how to cope with the situation, I decided to take advantage of this time and start to use my “spare” time at home writing papers. First those more important, and later some minors for which I somehow hadn’t found the time or the right motivation to finish before. In the middle of May, when the situation improved a little bit, we started to do the research part, but unfortunately the lectures stayed on-line.

The lockdown had repeated in Autumn (middle of October) once again and now in April 2021 we are still giving lectures on-line. We are able to do the research work in limited conditions (just several people in the lab, all wearing masks).



*Skiing under Covid-19 conditions.*

When I look back I can admit to be quite successful: completed several papers, one book chapter, organised three events – International school Hazardous substances in November 2020, Socratic lectures in December 2020, and ACE seminar in February 2021, completed student project entitled Deficit JAjocid – DEJA, financed through the programme Following creative path, for which students received the promoting student's projects award at the International Summer School Food Safety and Healthy Living in July 2020, and have submitted several application of EU and national projects. BUT - I miss my daily routine very much! I miss drinking coffee in the morning with my colleagues at work, discussing various things and most of all I miss traveling! I can hardly wait to prepare my luggage and sit on a plane to take me anywhere. No matter how efficient all those virtual tools can be,

they cannot bring the warmth of conversing in person, sharing the food and listening the crowd behind.

7) Nuno Ratola,  
**Faculty of Engineering of the University of Porto (FEUP), Portugal**

The first COVID-19 cases in Portugal were detected on March 2nd, 2020. Nowadays, more than 13 months after, as of April 11th, 2021, 827 494 cases were confirmed, with a terrible toll of 16 916 deaths so far.

This pandemic is without a doubt the most challenging event to occur in the country for several decades, including the declaration of the State of Emergency for the first time since the Carnation Revolution in 1974. The effects in the daily life of the population were obvious and ubiquitous, with academic life not being an exception. The first full lockdown measures in Portugal went on from March 13th to May 4th, 2020, hitting the second semester of classes at FEUP in full. Research activities were completely forbidden as well as presential lectures, including practical laboratory classes. Then, until June 1st, 2020 these restrictions were being lifted in different phases, which allowed laboratory classes to be resumed face-to-face and research activities to take place with strict public health measures and limiter number of people taking into account the area of the labs. The period of exams (June and July 2020) was mainly conducted with online platforms, since the attendance restrictions in the classroom made it impossible to have full presential evaluations. This was an obvious problem due to the reported cases of fraud facilitated by the obvious lack of surveillance of the students taking the exams in their homes.

The Summer of 2020 was relatively calm and there was the possibility to prepare the first semester of the 2020/2021 academic year considering a range of possibilities that could respond to the state of the pandemic at its start in September 2020. Nevertheless, with the end of Summer the cases and hospital admissions began to rise again, and the beginning of the classes had to be delayed for one week. Professors were given the possibility to have online or mixed approaches for the theoretical lectures and lab classes were authorized depending on the attendance of students. In my case, I was involved in the subject of Instrumental Methods of Analysis, from the second year of the Integrated Master in Chemical Engineering and the third year of the Integrated Master in Bioengineering. The theoretical

lectures were pre-recorded and available to the students from the start of the semester and for the laboratory classes we adopted a mixed approach. Usually there are six experiments taking place in class at the same time, with groups of 2 to 3 students in each of the experiments. This time, to comply with the limitation of attendance in the labs, we had to divide each class, having three groups performing the experiments in the lab and the other three groups at home, solving the calculations for the remaining experiments, after being provided with an explanatory video and simulated experiment data. This was a challenge for students, technicians and professors, but in the end it can be said that the approach was successful. The evaluation stages also had to be changed, and we decided to let go of the final exam and have strengthened continuous evaluation moments, including a questionnaire at the beginning of the lab experiments, an oral presentation of one of the experiments and a complete report of another experiment. This proved to be a good call, as the rampant number of cases at the beginning of 2021 led to another full lockdown by January 15th, 2021, lasting until March 21st, 2021. From this date, a very slow lift of the restrictions has been put in place by the Portuguese authorities.



*The work in the laboratory under pandemic conditions  
(Faculty of Engineering of the University of Porto).*

The second semester of the 2020/2021 year has thus been completely taught remotely (theoretical and practical classes) and students are only expected to return to the Universities by April 19th, 2021. Fortunately, research activities were allowed to go on under strict health safety measures and attendance restrictions in the labs. The vaccination efforts are underway, but university personnel were not included within the priority groups and will have their turn by age, as the rest of the non-



priority population. In my case I have been working mostly from home since the beginning of the pandemic and will continue to do so at least until I get the vaccine. We hope the 2021/2022 academic year can restore most of the “normality” we are so anxious for.

8) Malgorzata Iwona Szyrkowska-Jozwik,  
**Lodz University of Technology, Faculty of Chemistry, Lodz, Poland**

The coronavirus pandemic has resulted in a total disruption of the structure of our day and our mode of working. Unsurprisingly, it has also imposed numerous restrictions on the functioning of the Faculty of Chemistry, affecting all members of the academic community: researchers, teachers, students, administration and technicians. The worst and most unusual of them is the lack of direct contact with other people during lockdown. Changes have had to be made to the way we organize our work and communicate as well as to document automation.

The inescapable challenges we faced at the onset of the pandemic included preparing e-learning materials and generally moving classes and nearly all our professional activities online. Inevitably and regrettably, we were also obliged to cancel conferences and other academic events and to start holding virtual meetings and seminars. Contact between faculty members, staff and students via online platforms such as Microsoft Teams and Zoom has become the norm, as have online classes.

In the pandemic, research undoubtedly constitutes the biggest challenge. Unlike representatives of some academic disciplines, especially humanistic ones, who can largely carry out research from home, chemists and other scientists conducting empirical studies need access to laboratories and equipment, which is at times problematic and limited due to sanitary restrictions. Nevertheless, we make every effort to continue our research as far as possible. Under present circumstances, it seems advisable to put our time to good use when we do have access to laboratories and to take advantage of the time away from them by focusing on writing articles and putting our findings in order when under lockdown.

Following the first wave of the pandemic, our students were back on campus and completed their laboratory classes and projects. Our PhD students as well as MSc and BSc candidates also returned to their research projects and were able to continue or finish them. After two months of isolation and lockdown, resuming our activities in quasi-normal circumstances was like a breath of fresh air, giving everyone a new sense of freedom and joy.





*The new building of the Faculty of Chemistry at the Lodz University of Technology, Alchemium – the magical Future of Chemistry completed in February 2021.*

I am proud to announce that, despite adversities, in particular pandemic-related restraints, we have successfully managed to erect and equip the new building of the Faculty of Chemistry at the Lodz University of Technology, *Alchemium – the magical Future of Chemistry*. We can only regret that so little is happening right now: there are no students in our lecture halls and classrooms while the number of employees using the building is limited, because most of them work from home. Hopefully, in the near future, they will be able to return to the beautiful new campus spaces. The lecture halls and classrooms are awaiting both students and teachers, and we all look forward to going offline and going back to normal in the *Alchemium* building as well as in our faculty and university.

9) Jan Schwarzbauer,  
Institute of Geology and Geochemistry of Petroleum and Coal,  
RWTH, Aachen University, Germany

### A personal view on the pandemic from a German University



*Some impressions (screenshots) from a digital lab course on organic environmental analysis as performed in the winter term 2020/21 at RWTH Aachen University, Department of Geosciences.*

The Corona pandemic resulted in a lot of changes in the academic field. As a main side effect, the pandemic situation and its restrictions point to a lot of drawbacks in the educational systems. In Germany, an unbelievable rapid introduction of digital tools for teaching was observed in 2020. In the former decade a lot of discussions and projects have not lead to a comprehensive launching of digital methods, but within a very few months the whole university teaching has become an inconceivable digital boost. We have not only learned to communicate via video meetings, also a new communication etiquette as well as new features, situations and expressions have been experienced. Just as a few examples:

‘Frozen persons’ - unusual fixed persons during video conferences by losing internet connection

‘Please switch on your microphone/ Please turn off the microphone’ - Most frequently used sentences in video conferences

‘Sweat pants/jogging pants’ - new dress style

‘Background’ - new playing ground for Zoom users

However, beside many problems and stress, the pandemic also points to many positive experiences. Here, especially those persons should be mentioned that act in this hard times in a patient, cordial and constructive way. This includes many colleagues but also many very positive and encouraged students. And, contact with persons abroad became much easier simplifying for instance the research contacts with Asian and American colleagues. Another example are the board meetings of ACE. Here, the frequency of meetings increased in 2020 significantly since it is much easier to start Zoom as compared to travel to any European city for a personal meeting.

In summary, although many problems arose, the pandemic offered also chances to explore new tools, new approaches and to improve antiquated processes. Nevertheless, as many other colleagues and friends, I miss certainly a joined beer at conference evenings!