

XVI. International Congress of Toxicology (ICT2022) Maastricht, Nizozemska, 18. – 21. rujna 2022.

Od 18. do 21. rujna 2022. godine održan je u Maastrichtu, Nizozemska, 16. međunarodni toksikološki kongres (ICT2022).

Ovogodišnja je tema kongresa bila „*Uniting in Toxicology*“, čime je naglašena suradnja znanstvenika iz područja toksikologije i industrije u cijelom svijetu. Prije službenog otvorenja kongresa održano je sedam tečajeva (*Continuing Education Course*) iz aktualnih područja toksikologije (*Vaccine efficacy and safety evaluation, Regulatory toxicology, Adverse outcome pathways: Development and evaluation of quantitative AOPs and examples of their application, Understanding the computational approaches used in next generation risk assessment, Population-based experimental models for environmental health and toxicology, Considerations for Occupational Risk Management during Pregnancy i Tresholds of toxicological concern - recent developments*). Na otvorenju kongresa te prije početka svake sekcije održana su predavanja dobitnika nekoliko nagrada iz područja toksikologije (*Of genes and the environment, two decades of toxicogenomics*, predavač: Jos Kleinjas, Maastricht University; *Reconstructed human 3D tissue model in toxicology: from initial idea to the regulatory acceptance*, predavačica: Helena Kandarova, Institute of Experimental Pharmacology and Toxicology, Bratislava; *Using chemical and biological data and AI for predictive safety and toxicology*, predavač: Andreas Bender, University of Cambridge). Održan je i okrugli stol: *Challenges and opportunities for regulatory toxicology under the*

chemicals strategy for sustainability te izvrsna tradicionalna EUROTOX - SOT debata: *Is there a role for Artificial Intelligence and Machine Learning in risk decisions?* Publika je velikim pljeskom podržala afirmativnu tezu. Poster su bili izloženi dva dana te raspoređeni u 22 posterske sekcije, dok su predavanja iz različitih područja toksikologije bila prezentirana u 34 različite sekcije. Novost je bilo organizirano večernje druženje u pubovima uz predavanje i kviz *Pub-up your poison* tijekom kojeg su u 10 pubova održana predavanja o toksičnim učincima različitih tvari, a nakon predavanja je bio organiziran kviz.

Sažeci s kongresa objavljeni su u posebnom broju časopisa *Toxicology Letters* (388S: S1-335; 2022).

Na kongresu su održani sastanci svih tijela EUROTOX-a i IUTOX-a, a na sastanku svih predstavnika EUROTOX-a, dvoje znanstvenika je za svoj rad, kojim su pridonijeli cilju i ugledu EUROTOX-a, proglašeno počasnim članovima. Ove je godine ta čast iskazana finskom toksikologu Kaiju Savolainenu i predsjednici Hrvatskoga toksikološkoga društva Maji Peraica.

Najavljeni su sljedeći toksikološki kongresi u Europi i svijetu pri čemu su nama posebno zanimljivi EUROTOX 2023 koji će se održati u Ljubljani te Toksikološki kongres zemalja u razvoju (CTDC) za koji je planirano da se 2027. godine održi u Sarajevu.

*dr. sc. Anja Katić
dr. sc. Maja Lazarus
dr. sc. Dubravka Rašić*



Slika 1. Potvrda o počasnom članstvu u EUROTOX-u dodijeljena predsjednici Hrvatskoga toksikološkoga društva

Solutions in Chemistry 2022
Sveti Martin na Muri, 8. – 11. studenoga 2022.

Međunarodna konferencija Solutions in Chemistry 2022 održana je u organizaciji Hrvatskoga kemijskog društva od 8. do 11. studenoga u Termama Sveti Martin, Sveti Martin na Muri. Skupu je prisustvovalo više od 200 sudionika iz čak 14 zemalja. Okosnicu znanstvenog programa Konferencije činilo je 7 plenarnih (Werner M. Nau, Aleksandar Danilovski, Eric Bakker, Csaba Szántay Jr., Jurij Lah, Angela Danil de Namor, Nicoletta Ravasio) i 11 pozvanih predavanja (Predrag Čudić, Tomislav Biljan, Luna Maslov Bandić, Iva Rezić, Ewald Edink, Krešimir Molčanov, Nikolina Letić, Vladimir Stilinović, Žiga Jakopin, Giuseppe Cappelletti te Igor Živković, ovogodišnji dobitnik Nagrade Leopold Ružička). Održano je i 20 sekcijских predavanja, a poseban značaj treba pridati činjenici da je među predavačima bilo studenata diplomskih i poslijediplomskih studija, nastavnika kemije iz brojnih škola, istaknutih mladih znanstvenika u usponu, ali i znanstvenika s bogatim iskustvom u akademskim institucijama i industriji. U okviru Posterske sekcije izloženo je 45 radova. Po prvi put je dodijeljena Nagrada Tomislav Cvitaš za najbolje postersko priopćenje, koju je za svoj rad dobila studentica Marija Kuštro (Fakultet kemijskog inženjerstva i tehnologije Sveučilišta u Zagrebu, SuZg). U suradnji s Agencijom za odgoj i obrazovanje, održana je jednodnevna Edukacijska sekcija tijekom koje je 50 nastavnika kemije dobilo priliku saznati nešto o novim rješenjima u podučavanju kemije, kao i sudjelovati na okruglom stolu i brojnim raspravama. Održana je i predkonferencijska radionica tvrtke Technobis Crystallization Systems, kao i Pub kviz u suradnji s AlphaChrom d.o.o. te nekoliko kraćih sponzorskih predavanja.

Dodijeljeno je 7 stipendija izvrsnim studentima kemijskih i srodnih fakulteta kako bi se potaknulo njihovo sudjelovanje i aktivnost.

Sudionici Konferencije dobili su priliku upoznati baštinu, folklor i gastronomiju Međimurske županije kroz brojne društvene aktivnosti. Program otvorenja konferencije obogatili su članovi KUD Mura, točnije tamburaški sastav pod vodstvom g. Slavka Bregovića i folklorni ansambl pod vodstvom g. Tihomira Benčića. Održano je i službeno kušanje vina svjetski poznate i nagrađivane Vinarije Štampar, popraćeno zabavom dobrodošlice uz Tamburaški sastav Podrumari. Posterska sekcija odvijala se u sjajnoj atmosferi uz tzv. „beer break“ lokalne craft pivovare Lepi Dečki. Tijekom konferencijskog izleta sudionici su kušali i specijalitete domaće biodinamičke gastronomije koje je za tu priliku pripremila nagrađivana članica hrvatske kuharske reprezentacije Slađana Herman, što je bilo popraćeno ugodnom svirkom cimbulasa Nevena Kolarića u ugodnom ambijentu Riznice Međimurja koju su sudionici obišli te se upoznali s poviješću i legendama međimurskog kraja.

Skup Solutions in Chemistry 2022 podržalo je 17 pokrovitelja, a priznat je i od Europskog kemijskog društva (European Chemical Society, EuChemS). Velik doprinos Konferenciji dalo je ukupno 13 sponzora, od čega 5 zlatnih (AlphaChrom, JGL, Selvita, Technobis,

Xellia), 2 srebrna (Leukocare, PLIVA Hrvatska) te 6 brončanih (Chemical Abstracts Service, Institut za medicinska istraživanja i medicinu rada, Jasika, Labtim, Shimadzu, Vinchem), kao i 14 izlagača (AnAs, Ansar-Analitika, Anton Paar, Aparatura, Avantor (VWR), Bia, BIOCentar, Biovit, KEFO, LKB, Medic, Mettler Toledo, PRIMALab, Ru-Ve) i 3 donatora (Accumular, Kemijski odsjek PMF-a SuZg, Vinarija Štampar). Članak vezan uz smisao ideju Konferencije objavljen je u časopisu Kemija u industriji (<http://silverstripe.fkit.hr/kui/assets/Uploads/Skupovi-dogadaji-KUI-2022-09-10-661-663.pdf>). Konferencija je medijski popraćena na portalu *ChemistryViews*, a nekoliko je članaka objavljeno i na lokalnom portalu *regionalni.com*.

U više navrata tijekom održavanja Skupa promoviran je časopis *Croatica Chemica Acta* te je sudionicima upućen poziv za objavljivanje radova u njemu.

Organizacijski odbor Konferencije činili su članovi iz Hrvatske i inozemstva: Ernest Meštrović, Vladislav Tomišić (predsjednici), Andrea Usenik (tajnica), Klemen Bohinc, Nikola Bregović, Predrag Čudić, Petar Kassal, Danijel Namjesnik, Predrag Novak, Josip Požar, Rosana Ribić, Giovanna Speranza, Marina Šekutor i Ines Topalović Piteša. Organizacijski pododbor za Edukacijsku sekciju činili su Olgica Martinis (predsjednica), Jurica Bauer, Dražen Crnčec i Vladimir Stilinović. Njihov daljnji cilj je nastaviti s organizacijom znanstvenih i promocijskih aktivnosti vezanih uz Konferenciju te ju ponovo organizirati u studenome 2024. na istoj lokaciji.

Sve dosadašnje, kao i nove informacije vezane uz konferenciju Solutions in Chemistry mogu se pronaći na mrežnim stranicama konferencije (<https://solutionsinchemistry.hkd.hr/>), Facebook (<https://www.facebook.com/SolutionsInChemistry>) i Instagram profilima (<https://www.instagram.com/solutionsinchemistry/>; @SolutionsInChemistry), kao i Twitter (https://twitter.com/SiC_2022; @SiC_2022) te LinkedIn profilu.

Andrea Usenik
Tajnica Solutions in Chemistry 2022



Solutions in Chemistry 2022 Sveti Martin na Muri, Croatia, 8-11 November 2022

The International Conference Solutions in Chemistry 2022 was organised by the Croatian Chemical Society from 8 to 11 November at Terme Sveti Martin, Sveti Martin na Muri, Croatia. The event was attended by more than 200 participants from 14 countries. The backbone of the scientific programme of the Conference consisted of 7 plenary (Werner M. Nau, Aleksandar Danilovski, Eric Bakker, Csaba Szantay Jr., Jurij Lah, Angela Danil de Namor, Nicoletta Ravasio) and 11 invited lectures (Predrag Čudić, Tomislav Biljan, Luna Maslov Bandić, Iva Rezić, Ewald Edink, Krešimir Molčanov, Nikolina Letić, Vladimir Stilinović, Žiga Jakopin, Giuseppe Cappelletti, and Igor Živković, this year's winner of the Leopold Ružička Award). Twenty section lectures were also delivered, and it should be emphasised that among the lecturers there were graduate and postgraduate students, as well as chemistry teachers from numerous schools. During the Poster session 45 posters were presented. The Tomislav Cvitaš Award for the best poster presentation was awarded for the first time, and the Award was given to Marija Kuštro, student at the Faculty of Chemical Engineering and Technology, University of Zagreb. In cooperation with the Education and Teacher Training Agency, a one-day Education section was held, during which 50 chemistry teachers had the opportunity to learn about new solutions in chemistry teaching. A pre-conference workshop by Technobis Crystallization Systems was also held, as well as a Pub quiz in collaboration with AlphaChrom Ltd. Several shorter lectures were also given by the sponsors. Seven scholarships were awarded to excellent students from various faculties in order to encourage their participation and activity.

Conference participants had the opportunity to get to know the heritage, folklore, and gastronomy of Međimurje County through numerous social activities. The Opening ceremony was enriched by the members of KUD Mura, specifically the Tamburica ensemble led by Mr Slavko Bregović, and the folklore ensemble led by Mr Tihomir Benčić. An official wine tasting of the world-renowned and award-winning Štampar Winery was held, accompanied by the Welcome party with the tamburica players from KUD Podrumari. The Poster session was held in a great atmosphere with the so-called "beer break" of the local craft brewery Lepi Dečki. During the Conference excursion, the participants also tasted the specialties of local biodynamic gastronomy prepared for the occasion by the award-winning member of the Croatian Culinary Team, Slađana Herman, which was accompanied by a pleasant short concert by the cymbal player Neven Kolarić. This was organised in the pleasant ambience of the Treasury of Međimurje, in which the participants had a unique chance to learn about the history and legends of the Međimurje region.

Solutions in Chemistry 2022 conference was organised under the auspices of 17 institutions, and was also recognised by the European Chemical Society (EuChemS). A total of 13 sponsors made a great contribution to the Conference, of which 5 golden, 2

silver and 6 bronze sponsors, as well as 14 exhibitors and 3 donors. An article related to the meaning and idea of the Conference was published in the journal *Kemija u industriji* (<http://silverstripe.fkit.hr/kui/assets/Uploads/Skupovi-dogadaji-KUI-2022-09-10-661-663.pdf>). The Conference was covered by *ChemistryViews* magazine, and several articles were also published on the local web portal *regionalni.com*.

Croatica Chemica Acta, a scientific journal issued by the Croatian Chemical Society, was also promoted on several occasions during the Conference, and participants were invited to publish their scientific papers in the following issues.

The Organising Committee of the Conference was comprised of several members from Croatia and a broad, namely Ernest Meštrović and Vladislav Tomišić (chairs), Andrea Usenik (secretary), Klemen Bohinc, Nikola Bregović, Predrag Čudić, Petar Kassal, Danijel Namjesnik, Predrag Novak, Josip Požar, Rosana Ribić, Giovanna Speranza, Maina Šekutor, and Ines Topalović Piteša. Organising Subcommittee for Education Section was comprised of Olgica Martinis (chair), Jurica Bauer, Dražen Crnčec, and Vladimir Stilinović. Their goal for the future is to continue with the organisation of scientific and promotional activities related to the Conference and to organise it again in November 2024 at the same location.

All previous and new information related to the Solutions in Chemistry conference can be found on the Conference website (<https://solutionsinchemistry.hkd.hr/>), Facebook (<https://www.facebook.com/SolutionsInChemistry>) and Instagram (<https://www.instagram.com/solutionsinchemistry/>; @SoLutionsinChemistry), Twitter (https://twitter.com/SiC_2022; @SiC 2022) and LinkedIn profiles.

Andrea Usenik
Secretary of Solutions in Chemistry 2022

ToxLearn4EU – Toxicology Innovative Learning for Europe: Emerging Project

Erasmus+ is the European Union's programme that supports education, training, youth and sport in Europe. Program itself seats a strong focus on social inclusion, the green and digital transitions, and promoting young people's involvement in democratic life. It supports priorities and actions set out in the European Education Area, Digital Education Action Plan and the European Skills Agenda. Additionally, the whole programme supports the European Pillar of Social Rights, implements the EU Youth Strategy and develops the European dimension in sport. Erasmus+ also offers mobility and cooperation opportunities in higher education, vocational education and training, school and adult education as well youth and sport. More about the Erasmus+ initiative can be found at <https://erasmus-plus.ec.europa.eu/>.

Beginning in 2022, new Erasmus+ project named ToxLearn4EU - Toxicology Innovative Learning for Europe aims to modernize toxicology and ecotoxicology teaching in Europe. Mirta Milić, Marko Gerić and Goran Gajski (co-workers from the Mutagenesis Unit at the Institute for Medical Research and Occupational Health, Zagreb, Croatia) will be involved in providing innovative content on current hot topics in the field of toxicology to fit with recent evolution of European Policy (EU Action Plan: "Towards Zero Pollution for Air, Water and Soil", 2021).

The Erasmus+ ToxLearn4EU project was created by a consortium of 7 HEIs and 3 research centres and laboratories from different European countries (France, The Netherlands, Spain, Germany, Bosnia and Herzegovina, Portugal, Italy, Belgium, and Croatia). The project aims to modernise toxicology teaching across Europe and has several objectives and target audiences such as to develop and use innovative and free educational resources in order to develop high quality digital education; to provide innovative

content on current hot topics in the field of toxicology; to fit with recent evolution of European Policy and with job market needs; and to stimulate interest of students for those fields and limit school dropout by putting students back at the centre of teaching through the use of active pedagogies adapted to digital practice to recreate interactions between students, between students and their teachers, and by stimulating their motivation through playful approaches. ToxLearn4EU also meets the needs of teachers by proposing inspiring online courses which can be integrated in their own courses, or by motivating them to design and create their own new innovative courses, partners by modernising part of their curricula, stakeholders of toxicology by developing student and lifelong learner competencies adapted to job market and up-to-date to recent changes at the European Level. Last but not least, the project will meet the needs of European Commission by modifying curricula and developing courses adapted to the Green Deal that will for sure contribute to reach the ambitious objectives of EU Action Plan Towards Zero Pollution.

The ToxLearn4EU consortium is organised into several different Work Packages that will work together on development and organisation of summer schools, creation of educational content as well as on organisation of a series of dissemination events, conferences and webinars which will allow regular communication on the project progress and its results.

So, stay tuned and follow our progress for opportunities to join our summers schools and educational trainings, because they might even be held in Croatia.

Goran Gajski, Marko Gerić, and Mirta Milić
Institute for Medical Research and Occupational Health
Zagreb, Croatia

