HDKi HRVATSKO DRUŠTVO KEMIJSKIH INŽENJERA I TEHNOLOGA

HKD 1926

28HSKIKi

28th CROATIAN MEETING OF CHEMISTS & CHEMICAL ENGINEERS

6th SYMPOSIUM VLADIMIR PRELOG

MARCH 28–31, 2023

HOTEL LONE • ROVINJ

CROATIA

PROGRAMME

https://28hskiki.org
https://www.facebook.com/28hskiki
hskiki@fkit.hr

Selvita

https://selvita.com

WELCOME INTRODUCTION

Dear Colleagues, Partners and Friends,

The **28th Croatian Meeting of Chemists and Chemical Engineers (28HSKIKI)** is organized by the Croatian Society of Chemical Engineers and the Croatian Chemical Society in Rovinj on the west coast of the Istrian peninsula from 28 to 31 March 2023.

Since its first edition in 1969, the Meeting has been traditionally organized every two years by the Croatian Society of Chemical Engineers and the Croatian Chemical Society. It gathers around 400–500 chemists and chemical engineers from Croatia and neighbouring countries, coming from academia, institutes and industry, which actively participate and contribute to the success of the meeting with posters and oral presentations. An exhibition of chemical industrial and laboratory equipment and instrumentation, computer software and hardware, literature and other relevant material, will be organized as an accompanying manifestation. The official languages of the Meeting are English and Croatian.

The program of the Meeting will cover a broad range of topics and will be organized around the following sections: *Chemistry*, *Chemical and Biochemical Engineering*, *Materials*, *Environmental Protection*, and *Education*.

Croatian Meetings of Chemists and Chemical Engineers have a long history of hosting distinguished scientists as plenary lecturers. During the last fifty years, we were honoured by talks given by many Nobel laureates, like Vladimir Prelog, Robert Huber, Jean Marie Lehn, Richard R. Ernst, Ada Yonath, Ben L. Feringa and Dan Shechtman, as well as many other world known scientists, such as Peter William Atkins, Giorgio Baldi, Bernard Delmon, J. R. Flower, Gilbert F. Froment, Lothar Riekert, David W. T. Rippin, Ernst-Ulrich Schlunder, Karl Schugerl, Keneth B. Wiberg, Marko Zlokarnik, Robin Darton, Rafiqul Gani, Jean Marie Le Lann and many others.

All participating authors will be given the opportunity to present their results in the format of the full papers in the following journals: *Chemical and Biochemical Engineering Quarterly*, *Croatica Chemica Acta*, and *Food Technology and Biotechnology*.

This Meeting is going to be an interdisciplinary platform for leading academic scientists, researchers and research scholars to present and share their experiences and research results on all aspects of chemistry and related fields in a friendly interactive and collaborative atmosphere and discuss the latest achievements and novel approaches, the most recent innovations, trends as well as challenges and solutions adopted.

In addition to a broad and vibrant scientific program, the enchanting town of Rovinj will ensure our participants and guests to enjoy the beauties of Istria. Rovinj, the pearl of Istria, is located on the Adriatic coast, only 35 km from the Pula airport and in a close vicinity from the Zagreb, Trieste and Rijeka airports.

Prof.
Tatjana Gazivoda Kraljević
Chair of the Scientific and Organizing Committee

AUSPICES

Zoran Milanović
President of the Republic of Croatia

Croatian Academy of Sciences and Arts

Croatian Academy of Engineering
Croatian Chamber of Economy
Croatian Engineering Association
Education and Teacher Training Agency
European Chemical Society (EuChemS)
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PLIVA | teva

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KOBIS

SAPONIA

SK školska knjiga

PLENARY LECTURERS

Professor ROBERT DOMINKO, PhD
National Institute of Chemistry, Laboratory for Materials Electrochemistry, Ljubljana, Slovenia

Professor LJILJANA FRUK, PhD
University of Cambridge, Department of Chemical Engineering and Biotechnology, Cambridge, United Kingdom

Professor KARL GADEMANN, PhD
University of Zürich, Department of Chemistry, Zürich, Switzerland

Professor AURELIO HIDALGO HUERTAS, PhD
Universidad Autónoma de Madrid, Faculty of Science, Department of Molecular Biology, Madrid, Spain

Professor NUNO MAULIDE, PhD
University of Vienna, Department of Organic Chemistry, Vienna, Austria

Professor TONY MCNALLY, PhD
University of Warwick, International Institute for Nanocomposites Manufacturing (IINM), Coventry, United Kingdom

Associate Professor VLADIMIR STILINOVIĆ, PhD
University of Zagreb, Faculty of Science, Department of Chemistry, Zagreb, Croatia

INVITED LECTURERS

- **IVANA CAPAN, PhD**
  Ruđer Bošković Institute, Division of Materials Physics, Zagreb, Croatia
- **MARKO CIGLER, PhD**
  The Research Center for Molecular Medicine of the Austrian Academy of Sciences, Vienna, Austria
- **Professor ILIJA ČORIĆ, PhD**
  University of Zürich, Department of Chemistry, Zürich, Switzerland
- **IVAN HALASZ, PhD**
  Ruđer Bošković Institute, Division of Physical Chemistry, Zagreb, Croatia
- **Professor STELA JOKIĆ, PhD**
  Josip Juraj Strossmayer University of Osijek, Faculty of Food Technology, Osijek, Croatia
- **Associate Professor GABRIELA KALČIKOVA, PhD**
  University of Ljubljana, Faculty of Chemistry and Chemical Technology, Ljubljana, Slovenia
- **Professor SELIN KARA, PhD**
  Aarhus University, Department of Biological and Chemical Engineering, Aarhus, Denmark, and Leibniz University Hannover, Institute of Technical Chemistry, Hannover, Germany
- **PANAGHIOTIS KARAMANIS, PhD**
  University of Pau and Pays de l'Adour, Institute of Analytical Sciences and Physico-Chemistry for Environment and Materials, Pau, France
- **Professor ROLAND LUDWIG, PhD**
  University of Natural Resources and Life Sciences, Institute of Food Technology, Department of Food Science and Technology, Vienna, Austria
- **MOMIR MALIŠ, PhD**
  University of Zürich, Department of Chemistry, Zürich, Switzerland
- **Associate Professor DRAGINJA MRVOŠ-SERMEK, PhD**
  University of Zagreb, Faculty of Science, Department of Chemistry, Zagreb, Croatia
- **Associate Professor VESNA PETROVIĆ PEROKOVIĆ, PhD**
  University of Zagreb, Faculty of Science, Department of Chemistry, Zagreb, Croatia
- **MARCO RABUFFETTI, PhD**
  University of Milan, Department of Chemistry, Milan, Italy
- **Assistant Professor ANAMARIJA ROGINA, PhD**
  University of Zagreb, Faculty of Chemical Engineering and Technology, Zagreb, Croatia
- **DUŠAN STRMČNIK, PhD**
  National Institute of Chemistry Slovenia, Department of Materials Chemistry, Ljubljana, Slovenia
- **Assistant Professor ANITA ŠALIĆ, PhD**
  University of Zagreb, Faculty of Chemical Engineering and Technology, Zagreb, Croatia
- **Professor VIŠNJA VRDOLJAK, PhD**
  University of Zagreb, Faculty of Science, Zagreb, Croatia

PROGRAMME

28th CROATIAN MEETING OF CHEMISTS AND CHEMICAL ENGINEERS

March 28–31, 2023 | Rovinj, Hotel Lone

6th Symposium Vladimir Prelog

Croatian Society of Chemical Engineers

Croatian Chemical Society

SCIENTIFIC & ORGANIZING COMMITTEE

Tatjana Gazivoda Kraljević (*chair*)
Mirta Rubčić (*co-chair*)
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Zvjezdana Findrik Blažević
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Croatian Society of Chemical Engineers
Croatian Chemical Society

SECRETARIAT

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DESIGN & LAYOUT

Zdenko Blažeković

PRINT

Printorial d. o. o., Zagreb, Croatia

ORGANIZERS

CROATIAN SOCIETY OF CHEMICAL ENGINEERS (CSCE)

The **Croatian Society of Chemical Engineers (CSCE)** is a unique association of chemical engineers, chemists, and technologists that functions in the Republic of Croatia. CSCE gathers chemical engineers, chemists and technologists to improve chemistry, chemical engineering and related professions. It is permanently acting on the improvement of natural and technical sciences and their application in practice. It encourages all kinds of engineering activities aimed at the optimisation of technical and economic development, welfare, security, health, environmental protection and social well-being.

CSCE is the publisher of the journals: Kemija u industriji (**www.hdki.hr/kui**), Chemical and Biochemical Engineering Quarterly (**www.hdki.hr/cabeq**), and Reactor of Ideas (**https://www.hdki.hr/hdki/casopisi/reaktor_ideja**).

Website: **www.hdki.hr**

CROATIAN CHEMICAL SOCIETY (CCS)

Croatian Chemical Society (CCS) is a professional association that brings together chemists and cares for the development of chemistry in the Republic of Croatia. The main goal of the Society is to develop and promote scientific, professional and educational activities in all areas of pure and applied chemistry. The objectives are achieved through the full range of activities such as lectures, scientific and professional meetings and symposia, encouraging scientific and professional work in the field of chemistry, popularization of chemistry as natural science, promotion and improvement of chemistry teaching at all levels of education and participation in organization of competitions in chemistry at county, national and international level. In the frame of its publishing activities CCS publishes the scientific journal Croatica Chemica Acta since 1927 (**http://public.carnet.hr/ccacaa/**).

Website: **www.hkd.hr**

MINISYMPOSIUM VLADIMIR PRELOG

The main objective of the **Minisymposium Vladimir Prelog** is to provide the opportunity for younger chemists, particularly in the field of organic and medicinal chemistry, to present the results of their scientific research through short lectures within the Meeting. The Meetings of Chemists and Chemical Engineers are held every two years which is also the rhythm of the Symposium Vladimir Prelog. Our late Nobel Prize-winner and teacher would certainly rejoiced this venture, because it promotes and encourages young scientists to continue their successfully started careers.

FACULTY OF CHEMICAL ENGINEERING AND TECHNOLOGY

The roots of the **Faculty of Chemical Engineering and Technology**, date back to 1919, when Technical high school in Zagreb was founded with the aim "to give a thorough theoretical and practical education for those technical vocations, whose professions are represented in the institution". The mission of the Faculty is to promote chemical engineering and applied chemistry as a scientific discipline, by linking science and technology with business, industry and the public sector, with the aim of achieving sustainable development, an increase in the general level of innovation of society, accelerating the transfer of knowledge, and creating and encouraging new businesses.

Website: **http://www.fkit.unizg.hr/**

GENERAL INFORMATION

Registration desk opening hours

Tuesday, March 28, 2023	**14:00–21:00**
Wednesday, March 29, 2023	**8:30–18:00**
Thursday, March 30, 2023	**8:30–14:00**
Friday, March 31, 2023	**8:30–12:00**

Language

The official languages of the Meeting are English and Croatian.

Lectures

All plenary and invited lectures, as well as oral presentations and workshops will be held in Congress Hall Lone, Hall 1 Lone, Hall 2 Lone, Hall 3 Lone and Meeting room 4 Lone according to the programme. Workshops of Section Education will be held in the Hall 3 Lone. Mini symposium Vladimir Prelog will be held in Hall 3 Lone. The opening ceremony will take place in the Congress Hall Lone, while the closing ceremony will be in the Hall 1 Lone and Hall 2 Lone.

Posters

Poster presentation will be held at Eden Hall Maslina. Setting-up and taking down of posters will take place as follows:

Day 2, March 29, 2023:	**8:00–18:30**
Day 3, March 30, 2023:	**8:00–18:30**

Exhibition

An exhibition of scientific and technical equipment will be held at Lone Lobby.

Paper publication

The full-length papers of scientific contributions presented at the Meeting will be considered for the publication in the following journals:
Chemical and Biochemical Engineering Quarterly | Croatica Chemica Acta | Food Technology and Biotechnology

Sections

Chemistry | Chemical and Biochemical Engineering | Environment Protection | Materials | Education

Presentations

Plenary lectures	**45 + 15 min**	Workshops	**45 min**
Invited lectures	**20 + 10 min**	Posters	
Oral presentations	**15 + 5 min**		

28. HSKIKI | March 28–31, 2023 | Rovinj, Croatia

TUESDAY

MARCH 28

TUESDAY | March 28, 2023

14.00 – 16.00	**Registration** *Lone Lobby*
16.00 – 16.30	**Opening ceremony** *Congress Hall Lone / lower floor (–1)*
16.30 – 17.30	***PLENARY LECTURE*** *Congress Hall Lone / lower floor (–1)* *Chair*: Robert Vianello **Tony McNALLY** Towards useful composites of polymers and nanoparticles
17.30 – 18.30	**Sponsors** Selvita d.o.o., Xellia d.o.o. RU-VE d.o.o. Mettler Toledo d.o.o. BIA d.o.o., Jasika d.o.o., Labena d.o.o. Shimadzu d.o.o. *Congress Hall Lone / lower floor (–1)*
19.00 – 21.00	**Welcome reception** *Lone Lobby, Conference Bar, Conference Terrace*

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WEDNESDAY

MARCH 29

WEDNESDAY | March 29, 2023

8.00 – 9.00	**Registration** *Lone Lobby*
9.00 – 10.00	***PLENARY LECTURE*** *Congress Hall Lone / lower floor (−1)* *Chair*: Dean Marković **Karl GADEMANN** Microbiome metabolites: Syntheses and surprises
10.00 – 10.30	**Coffee Break**
10.30 – 12.30	**A – CHEMISTRY** *Hall 1 Lone* *Chair*: Iva Rezić
10.30 – 11.00	***INVITED LECTURE*** **Roland LUDWIG** Redox biochemistry for biopolymer degradation
11.00 – 11.30	***INVITED LECTURE*** **Višnja VRDOLJAK, Mirna Mandarić, Jana Pisk, Edi Topić, Mirta Rubčić, Tomica Hrenar, Nikol Bebić, Dino Kuzman, Marina Cindrić** Metallosupramolecular architectures and inorganic-organic polyoxometalate-based hybrids
11.30 – 12.30	***ORAL PRESENTATION***
	Chair: Tin Weitner
11.30 – 11.50	**Dubravka MADUNIĆ ČAČIĆ, Blaženka Ćiško-Anić, Nikola Sakač, Marija Jozanović** Potentiometric determination of QAC based biocides and PHMB in multi-component mixtures using highly sensitive homemade ionic surfactant sensors
11.50 – 12.10	**Eszter KÀSA, Bence Kutus, Pál Sipos** Synthesis and neutralization of sodalites with different anion content
12.10 – 12.30	**Lara JURKOVIĆ, Ivana Čarapar, Daniel Mark Lyons** Synthesis and characterisation of polymer nanoparticles and their behaviour in aquatic environments
10.30 – 12.30	**B – BIOCHEMICAL ENGINEERING** *Hall 2 Lone* *Chair*: Maja Molnar
10.30 – 11.00	***INVITED LECTURE*** **Selin KARA** Process engineering strategies towards efficient biotransformations

11.00 – 11.30	***INVITED LECTURE*** **Stela JOKIĆ** Insights into green techniques for the extraction of bioactive compounds: Current research and future challenges
11.30 – 12.30	***ORAL PRESENTATIONS***
11.30 – 11.50	**Nevena MILČIĆ, Martina Sudar, Irena Dokli, Maja Majerić Elenkov, Zvjezdana Findrik Blažević** Biocatalytic synthesis of enantiopure fluorinated building blocks: Discovering the bottlenecks by enzyme reaction engineering approach
11.50 – 12.10	**Dino SKENDROVIĆ, Ivana Petrić, Ana Vrsalović Presečki** Kinetic modelling of aldolase immobilized on magnetic nanoparticles
12.10 – 12.30	**Nikša Bekavac, Ana JURINJAK TUŠEK, Mia Radović, Marina Cvjetko Bubalo, Bruno Zelić, Anita Šalić** Selection of the natural deep eutectic solvent for extraction of the *Aspergillus oryzae* lipase from liquid formulations
10.00 – 12.30	**6th SYMPOSIUM VLADIMIR PRELOG** *Hall 3 Lone* *Chair*: Matija Gredičak
10.30 – 10.50	***INVITED LECTURE*** **Christophoros KOKOTOS** Organic synthetic photochemistry: Providing novel and green organic transformations
10.50 – 11.30	***INVITED LECTURE*** **Nikola CINDRO, Gregor Talajić, Edi Topić, Jerko Meštrović** Total synthesis of penicyclone A
	ORAL PRESENTATIONS
11.30 – 12.30	*Chair*: Matija Gredičak
11.30 – 11.50	**Željka CAR, Matias Bliznac, Vesna Petrović Peroković, Monika Kovačević, Rosana Ribić, Lidija Barišić** Preparation of diamide derivatives of a disubstituted ferrocene with desmuramyl peptide and mannose subunit
11.50 – 12.10	**Anja BEČ, Leentje Persoons, Els Vanstreels, Dirk Daelemans, Kristina Starčević, Marijana Hranjec** Synthesis and biological activity of novel benzazole acrylonitriles
12.10 – 12.30	**Dajana GAŠO-SOKAČ, Valentina Bušić, Sunčica Roca, Antonio Sabljić** Synthesis of hydrazone derivatives of vitamin B6, pyridine-4-carbaldehyde and 2-quinolinecarbaldehyde
12.30 – 14.00	**Lunch**

14.00 – 15.00	***PLENARY LECTURE*** *Congress Hall Lone / lower floor (–1)* *Chair*: Suzana Šegota **Ljiljana FRUK** Bio-nano tools in medicine: From *in vivo* biosensing to drug delivery
15.00 – 15.30	**Coffee Break** *Lone Lobby*
15.00 – 16.30	**Poster presentations** *Eden Hall Maslina* *A – Chemistry*
15.30 – 16.00	**Workshop – BIA** *Hall 1 Lone*
17.00 – 18.30	**A – CHEMISTRY** *Hall 1 Lone* *Chair*: Vladimir Damjanović
17.00 – 17.30	***INVITED LECTURE*** **Marko CIGLER, Hana Imrichova, Fabian Frommelt, Andrea Rukavina, Chrysanthi Kagiou, Sonja Sievers, Luca Laraia, Giulio Superti-Furga, Herbert Waldmann, Georg E. Winter** Probing leukemic vulnerabilities *via* small molecules inspired by natural products with anolides
17.30 – 18.30	***ORAL PRESENTATIONS***
17.30 – 17.50	**Anja RAKAS, Dajana Kučić Grgić, Leentje Persoons, Els Vanstreels, Dirk Daelemans, Tatjana Gazivoda Kraljević** Synthesis and biological activity of novel 1,2,3-triazole derivatives of benzoxazole
17.50 – 18.10	**Ivona KROŠL KNEŽEVIĆ, Marta Jurković, Karla Ribičić, Biserka Žinić, Dragomira Majhen, Ksenija Božinović, Ivo Piantanida** Impact of the histidine-triazole and tryptophan-pyrene exchange in the whw peptide: Cu(II) binding, DNA/RNA interactions and bioactivity
18.10 – 18.30	**Barbara PANIĆ, Ivana Biljan, Ivan Kodrin** Synthesis and characterization of porous organic polymers with different organic building units bridged by azo bonds
17.00 – 18.30	**B – CHEMICAL ENGINEERING** *Hall 2 Lone* *Chair*: Marko Rogošić

17.00 – 17.30	***INVITED LECTURE*** **Milena Zorko, Pedro Farinzzo Bergamo Dias Martins, Dževad Kozlica, Boštjan Genorio, Dušan STRMČNIK** Governing principles behind interfacial processes in energy storage and conversion systems
17.30 – 18.30	***ORAL PRESENTATIONS***
17.30 – 17.50	**Blaž LIKOZAR, Sašo Gyergyek, Andraž Pavlišič, Anže Prašnikar, Matej Huš** Chemical energy storage utilising catalysis: Hydrogen, ammonia, CCU and beyond
17.50 – 18.10	**Vanja KOSAR, Karlo Sklepić, Vesna Tomašić** Process intensification in the photocatalytic degradation of imidacloprid by permanent magnets
17.00 – 17.30	**6th SYMPOSIUM VLADIMIR PRELOG** *Hall 3 Lone* *Chair*: Matija Gredičak
17.00 – 17.30	***INVITED LECTURE*** **Marco RABUFFETTI** Sustainable synthesis of biosurfactants from renewable resources
17.30 – 18.30	**C – MATERIALS** *Hall 3 Lone* *Chair*: Dražan Jozić
	ORAL PRESENTATIONS
17.30 – 17.50	**Ena Pezić, Branka Mihaljević, Jordi Sancho Parramon, Pavo Dubček, Damir Kralj, Katarina MARUŠIĆ** Radiation crosslinking of self-assembled monolayers for corrosion protection of metals
17.50 – 18.10	**Izabela ĐURASOVIĆ, Goran Dražić, Goran Štefanić, Marijan Marciuš, Mile Ivanda, Marijan Gotić** Influence of Pt/SnO_2 synthesis procedures on the catalytic reduction of 4-nitrophenol to 4-aminophenol

28. HSKIKI | March 28–31, 2023 | Rovinj, Croatia

THURSDAY

MARCH 30

8.00 – 9.00	**Registration** *Lone Lobby*
9.00 – 10.00	***PLENARY LECTURE*** *Congress Hall Lone / lower floor (–1)* *Chair*: Robert Vianello **Nuno MAULIDE** The beautiful simplicity of rearrangements: Towards ideal reactions?
10.00 – 11.00	***PLENARY LECTURE*** *Congress Hall Lone / lower floor (–1)* *Chair*: Zvjezdana Findrik Blažević **Aurelio HIDALGO HUERTAS** The best of both worlds: How to combine chemistry and biology to discover greener biocatalysts using artificial, cell-like compartments
11.00 – 11.30	**Coffee Break**
11.30 – 12.30	**A – CHEMISTRY** *Hall 1 Lone* *Chair*: Adriana Kenđel, Suzana Šegota
11.30 – 12.00	***INVITED LECTURE*** **Ivan HALASZ, Stipe Lukin** Hydrogen isotope exchange and the kinetic isotope effect in mechanochemical reactions of bulk solids
12.00 – 12.30	***INVITED LECTURE*** **Momir MALIŠ, Eva Vandaele, Sandra Luber** Nonadiabatic processes in condensed phase systems with ΔSCF
12.30 – 13.10	***ORAL PRESENTATIONS***
12.30 – 12.50	**Sara KRIVAČIĆ, Marko Zubak, Petar Kassal** The preparation and optimization of poly(vinyl butyral) based membranes for *in-situ* formation of solid-state Ag/AgCl reference electrode
12.50 – 13.10	**Ivica CVRTILA, Ivan Halasz** 2-formylpyridine blue out of the blue
11.30 – 13.10	**C – MATERIALS** *Hall 2 Lone* *Chairs*: Dražan Jozić, Aleksandra Sander
11.30 – 12.00	***INVITED LECTURE*** **Anamarija ROGINA** Biodegradable composite materials as scaffolds and drug delivery systems for bone tissue engineering application

12.00 – 12.30	***INVITED LECTURE*** **Ivana CAPAN, Jose Coutinho, Luka Snoj, Takahiro Makino** Silicon carbide for radiation detection
12.30 – 13.10	***ORAL PRESENTATIONS*** *Chairs*: Dražan Jozić, Aleksandra Sander
12.30 – 12.50	**Juraj NIKOLIĆ, Ana Ivančić, Tin Klačić, Davor Kovačević** Importance of the precursor layer for tuning the properties of chitosan / carboxymethyl cellulose polyelectrolyte multilayers
12.50 – 13.10	**Ivan PUCKO, Rafael Anelić, Fabio Faraguna** Influence of methacrylic polymer additives with different composition and molecular weight on the low-temperature behaviour of diesel fuel
11.30 – 13.10	**D – ENVIRONMENTAL PROTECTION** *Hall 3 Lone* *Chairs*: Hrvoje Kušić, Dajana Kučić Grgić
11.30 – 12.00	***INVITED LECTURE*** **Gabriela KALČIKOVA** Effective approaches to limit the input of microplastics into the aquatic environment
12.00 – 12.30	***INVITED LECTURE*** **Panaghiotis KARAMANIS** From nanoscale to bulk: Nonlinear optical properties of materials
12.30 – 13.10	***ORAL PRESENTATIONS*** *Chairs*: Hrvoje Kušić, Dajana Kučić Grgić
12.30 – 12.50	**Kristina BULE MOŽAR, Viktorija Martinjak, Martina Miloloža, Matija Cvetnić, Tomislav Bolanča, Dajana Kučić Grgić, Marinko Markić, Dora Matijašec, Šime Ukić** Determination of significant parameters of the UV-C/$S_2O_8^{2-}$ process for the degradation of LDPE and PP microplastics
12.50 – 13.10	**Tatjana ŠOLEVIĆ KNUDSEN, Mila Ilić, Jelena Milić, Jelen Avdalović, Sandra Bulatović, Nenad Marić, Miroslav M. Vrvić** Environmental risk assessment of volatile organic contaminants in the Sava river aquifer, Belgrade, Serbia
13.10 – 14.30	**Lunch**
14.30 – 15.00	**Coffee Break** *Eden Lobby*
14.30 – 16.00	***POSTER PRESENTATIONS*** *Eden Hall Maslina (B – Chemical and Biocehmical Engineering, C – Materials, D – Environmental Protection)*
14.30 – 16.00	**Workshop – Process Analytical Technology (PAT) for Real Time Control** *Meeting Room 4 Lone*
16.30 – 20.00	**Excursion**
21.00 – 24.00	**Gala Dinner** *Congress Hall Lone*

28 HSKIKi WORKSHOP

Process Analytical Technology (PAT) for Real Time Control

March 30, 2023, 14:30
Rovinj, Croatia, Hotel Lone,
Meeting Room 4

TOPICS

- **Quality by Control & Real-time measurement**
- **Benefits of using PAT**
- **PAT application in R&D and production**
- **Demonstration of new tools & concepts for advanced control**

SPEAKERS

- **N. Bolf**, University of Zagreb, Faculty of Chemical Engineering and Technology
- **J. Panek & M. Joksch**, Living Lab, Siemens Austria
- **S. Radel**, usePAT, Vienna
- **J. Sacher, M. Gavran, M. Sejdić**, University of Zagreb, Faculty of Chemical Engineering and Technology

MODERATOR

- **D. Šahnić**, Pliva/Teva TAPI R&D Pilot

CASE STUDIES

- **Calibration model development**
- **PAT with SIPAT**

LABORATORY FOR AUTOMATION AND MEASUREMENT
FACULTY OF CHEMICAL ENGINEERING AND TECHNOLOGY
FKITMCMXIX

CrystAPC
crystallization advanced process control

14:30 Introduction
14:40 PAT tools for control
15:00 CASE STUDIES
15:30 PAT measurement optimization
15:45 Living Lab, Siemens
NETWORKING

MORE INFORMATION:

SUPPORTED BY:
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The project was co-financed by the EU from the European Fund for Regional Development.

28. HSKIKI | March 28–31, 2023 | Rovinj, Croatia

FRIDAY

MARCH 31

9.00 – 10.00	***PLENARY LECTURE*** *Halls 1 and 2 Lone / lower floor (–1)* *Chair*: Boštjan Genorio **Robert DOMINKO** The sustainable approach in battery research and development
10.00 – 10.30	***Coffee Break***
10.30 – 11.40	**A – CHEMISTRY** *Hall 1 Lone* *Chair*: Jurij Lah
10.30 – 11.00	***INVITED LECTURE*** **Ilija ČORIĆ** Direct C–H Arylation
11.00 – 11.20	***ORAL PRESENTATIONS*** **Mario LOVRIĆ, Michael Widdowson, Bo Chawes, Morten A. Rasmussen** QSAR bioactivity prediction in clinical metabolomics
11.20 – 11.40	**Petra STANIĆ, Krešimir Molčanov** Variable-temperature crystallography and X-ray charge density study of π-stacking in single crystals of organic salts
10.30 – 11.40	**B – CHEMICAL ENGINEERING** *Hall 2 Lone* *Chair*: Vesna Tomašić
10.30 – 11.00	***INVITED LECTURE*** **Anita ŠALIĆ** Process intensification trough miniaturization
11.00 – 11.20	***ORAL PRESENTATIONS*** Žarko OLUJIĆ Reducing energy demand and carbon footprint of distillation columns
11.20 – 11.40	**Ivan KARLO CINGESAR, Iva Katalinić Paić, Marijan-Pere Marković, Domagoj Vrsaljko** Effect of static mixers on biodiesel synthesis in microreactors
11.40 – 12.20	**D – ENVIRONMENTAL PROTECTION** *Hall 1 Lone* *Chair*: Nikolina Vidović
11.40 – 12.00	***ORAL PRESENTATIONS*** **Anamarija PULITIKA, Marin Kovačić, Panagiotis Karamanis, Ana Lončarić Božić, Hrvoje Kušić** Computational study of microPET adsorption mechanism for benzene derivatives in water

12.00 – 12.20	**Suzana SOPČIĆ, Ivana Jakovljević, Gordana Pehnec** Organic compounds in particulate matter collected at Plitvice Lakes
11.40 – 12.00	**B – BIOCHEMICAL ENGINEERING** *Hall 2 Lone* *Chair*: Vesna Tomašić
11.40 – 12.00	***ORAL PRESENTATIONS*** **Martina TRTINJAK, Ivana Stojmilović, Tomislav Domanovac, Monika Šabić Runjavec, Marija Vuković Domanovac** Bioremediation modelling of highly polluted wastewater using microorganisms
9.00 – 12.35	**E – EDUCATION** *Hall 3 Lone* *Chair*: Olgica Martinis
9.00 – 10.00	***PLENARY LECTURE*** **Vladimir STILINOVIĆ** Studying science through its history – the tale of the Chemical Revolution
10.30 – 11.30	***INVITED LECTURE*** **Draginja MRVOŠ-SERMEK** The history of chemistry teaching in Croatia
11.30 – 12.15	**Vesna PETROVIĆ PEROKOVIĆ** Stereochemistry: Configuration and chemistry teaching
12.15 – 12.35	***ORAL PRESENTATIONS***
11.30 – 11.50	**Monika PAVIĆ, Maja JURIĆ-BABAJA** Experiment – forever and ever!
12.40 – 14.00	**Closing ceremony and poster awards** *Halls 1 and 2 Lone*

9.00 – 12.35	**EDUCATION** **Hall 3 Lone** Chair: Olgica Martinis
12:35 - 13:35	***ORAL PRESENTATIONS***
12:35 - 12:55	**Mirta MALČIĆ, Suzana LOVRIĆ** Teaching Chemistry then and now
12:55 - 13:15	**Daria STEJSKAL, Renata RUIĆ FUNČIĆ** Teacher's perception of support in stressful situations
13:15 -13:35	**Darija VIŠTICA, Melita BARIĆ TOMINAC** From raw materials to useful products
13.30 – 14.30	**Lunch break**
14.30 – 19.30	**EDUCATION** **Elementary school Juraj Dobrila, Rovinj**
14.30 – 14.45	**OPENING CEREMONY** *Marin Mihovilović*

14.45 – 16.15	**WORKSHOPS**
	A. workshop (class 12) **Names of chemical elements** *Vladimir Stilinović*
	B. workshop (class 13) **Preparing for teaching chemistry once and now** *Olgica Martinis*
	C. workshop (class 14) **Teaching strategies in teaching chemistry once and now** *Draginja Mrvoš-Sermek*
16:15 – 16:45	**Pause break**
16:45 – 18:15	**WORKSHOPS A, B and C**
18:15 – 19:00	**ROUND TABLE** **Traditional teaching strategies *vs.* artificial intelligence in education** *All participants*
19:00 – 19:15	**CONCLUSIONS** *Olgica Martinis*
19:30	**CLOSING CEREMONY** *Olgica Martinis*

POSTER SCHEDULE

Wednesday, March 29, 2023

Section	
CHEMISTRY	P-A1 – P-A90

Thursday, March 30, 2023

Section	
CHEMICAL AND BIOCHEMICAL ENGINEERING	P-B1 – P-B39
MATERIALS	P-C1 – P-C37
ENVIRONMENTAL PROTECTION	P-D1 – P-D29

Friday, March 31, 2023

Section	
EDUCATION	EP-1 – EP-2

POSTER PRESENTATIONS

28. HSKIKI | March 28–31, 2023 | Rovinj, Croatia

P-A1	**Arijeta Bafti, Jana Vapaavuori, Tapio Lokki, Floren Radovanović-Perić, Vilko Mandić** Cellulose aerogels and their acoustic properties
P-A2	**Ines Bašić, Ana Mikleušević, Matija Gredičak** Dearomative two-component cascade for pyrrolo [3,4-*b*] indole preparation
P-A3	**Charikleia S. Batsika, Charalampos Koutsilieris, Giorgos S. Koutoulogenis, Maroula G. Kokotou, Christoforos G. Kokotos, George Kokotos** Sunlight or UVA-light-induced oxidation of aldehydes to carboxylic acids under aerobic conditions without the use of external photocatalyst
P-A4	**Nea Baus Topić, Dominik Cinčić** Perhalogenated aromatic amines as bifunctional donor molecules in cocrystals with ditopic nitrogen-containing acceptors
P-A5	**Ivana Biljan, Laura Nuić, Barbara Panić, Iva Šrut Rakić, Marko Kralj** Insights into the polymerization of aromatic dinitroso derivatives initiated by nitroso-terminated monolayer on Au(111) surface
P-A6	**Alen Bjelopetrović, Stipe Lukin, Sara Morasi-Piperčić, Manda Ćurić, Marina Juribašić Kulcsár** Solid-state synthesis and structure of *o*- and *p*-substituted azobenzene amides
P-A7	**Ida Boček Pavlinac, Mirna Dragić, Kristina Starčević, Marijana Hranjec** New hydroxy substituted acrylonitrile imidazo[4,5-*b*]pyridines as potential antioxidants and pH sensors
P-A8	**Lidija Brkljačić, Kristina Pregiban, Ivanka Jerić** Method development for the determination of water-soluble vitamins in enteral food with LC-MS
P-A9	**Petra Brzović, Greta Krešić, Nikolina Liović, Tea Bilušić** The influence of drying process on the phenolic, flavonoids and anthocyanins content of chokeberry extract obtained by microwave-assisted extraction
P-A10	**Dražen Čavužić** Very weak base pK_a determination
P-A11	**Mario Cetina, Manuel Petroselli, Corrado Bacchiocchi, Massimo Cametti, Zoran Džolić** Influence of biphenyl-bis-urea receptor terminal substituents on anion binding properties
P-A12	**Ivona Čipor, Marcela Šišić, Ruža Frkanec, Leo Frkanec** *N*,*N*-di(2-picolyl)amine functionalized amino acid based supramolecular hydrogels: Synthesis, characterisation and potential biomedical application
P-A13	**Ivana Colić, Ivanka Jerić** Synthesis of oligomers with embedded C-glycosyl α-amino acids
P-A14	**Ivan Ćorić, Jelena Bijelić, Dalibor Tatar, Martina Šrajer Gajdošik, Elvira Kovač-Andrić** Sonochemical synthesis and characterization of ZrO_2 nanoparticles

P-A15	**Vladimir Damjanović, Danijela Musija, Igor Picek, Blaženka Foretić** Equilibrium and kinetic studies on the reactions of aquapentacyanoferrate(II) with 4-imidazoline-2-thiones
P-A16	**Lucija Dončević, Renata Biba, Mario Cindrić** Data independent acquisition *de novo* sequencing technique
P-A17	**Josip Draženović, Đani Škalamera, Nikola Basarić** Carbazole derivatives as precursors of aza-*o*-quinone methides
P-A18	**Nikolina Filipović, Berislav Marković, Stjepan Šarić, Katarina Mišković Špoljarić** Dinuclear copper(II) complexes derived from benzopyrone ligand: Synthesis, structural characterization and antiproliferative activity
P-A19	**Eirini M. Galathri, Lorenzo Di Terlizzi, Maurizio Fagnoni, Stefano Protti, Christoforos G. Kokotos** Friedel-Crafts type arylation of aldehydes with indoles utilizing a photoacid generator and blue LED irradiation
P-A20	**Olivera Galović,, Ivan Pritišanac, Renata Dončić, Manuela Košević, Zlata Kralik, Gordana Kralik** Extraction of vitamin E from hens feed mixture
P-A21	**Nika Gazdek Serdar, Iva Zonjić, Ivana Nikšić-Franjić, Leo Frkanec, Ivo Piantanida** A model for acute poisoning detoxification – binding of aristolochic acid with various cyclodextrins
P-A22	**Petros L. Gkizis, Christoforos G. Kokotos** Novel, sustainable and green photooxidation protocols: Easy access to sulfoxides and phenols
P-A23	**Martina Gudelj, Matija Tomšič, Perica Bošković** Surfactant free microemulsion composed of heptanol, ethanol and water
P-A24	**Lucija Hok, Robert Vianello** Selective deuteration improves the affinity of adenosine A_{2A} receptor ligands: A computational case study with istradefylline and caffeine
P-A25	**Gordan Horvat** Chemometric analysis of adaptive titrant addition procedure for spectrophotometric stability constant measurements
P-A26	**Irena Ivanišević, Petar Kassal** Development of a planar printed lactate biosensor
P-A27	**Zoe Jelić Matošević, Katarina Radman, Ivo Crnolatac, Nikola Bregović, Ivo Piantanida, Ivana Leščić Ašler, Branimir Bertoša** Computational and experimental study of transcription factors that control manganese homeostasis in bacteria
P-A28	**Mario-Livio Jeličić, Daniela Amidžić Klarić, Jelena Kovačić, Vladimir Stankov, Marija Gulan Čičak, Boris Bučar, Nikša Turk, Željko Krznarić,, Ana Mornar** Determination of ethylene oxide in botanical dietary supplements used in the treatment of IBD by gas chromatography-tandem mass spectrometry
P-A29	**Marijana Jurić, Ana Lozančić, Lidija Molčanov, Sanja Burazer, Lidija Androš Dubraja, Martina Vrankić** Single-step preparation of mixed metal oxides from heterometallic compounds

P-A30	**Marta Jurković, Vilko Smrečki, Ivo Piantanida** High selectivity of fluorescent (triazole)coumarin peptides to metal cations – fluorimetric and NMR approach
P-A31	**Maja Karnaš, Karolina Vrandečić, Jasenka Ćosić, Vesna Rastija, Dejan Agić, Domagoj Šubarić, Maja Molnar** Synthesis and antifungal activity of novel 1,2,4-triazolyl coumarins
P-A32	**Ivana Kekez, Mihovil Faletar, Mario Kekez, Laura Cendron, Giuseppe Zanotti, Dubravka Matković-Čalogović** Exploring the cooper affinity toward the CrdA protein from *Helicobacter pylori*
P-A33	**Adriana Kenđel, Ivana Radoslavić** Enhancement of Raman scattering on gold nanoparticles prepared in HEPES buffer
P-A34	**Ivan Kodrin, Tea Frey, Petar Šutalo, Barbara Panić, Ivana Biljan** Pyridine and amine-based porous organic materials with azo, azoxy and azodioxy linkages for selective CO_2 adsorption
P-A35	**Maria Kolympadi Markovic, Dario Matulja, Marija Jozanović, Nikola Sakač, Gabriela Ambrožić, Davor Šakić, Valerije Vrček, Dean Marković** Catalytic conversion of CO_2 into organic cyclic carbonates
P-A36	**Mario Komar, Valentina Pavić, Dragica Suknović, Maja Molnar** Mechanochemical synthesis of quinazolinone Schiff bases in deep eutectic solvents
P-A37	**Davor Kovačević, Tajana Begović** Stability of nanoparticles and their interactions with polyelectrolytes
P-A38	**Monika Kovačević, Sunčica Roca, Mojca Čakić Semenčić, Nikolina Orešković, Maj Mezić, Evelin Radešić, Lidija Barišić** Hydrogen bonding patterns in ferrocene tripeptides
P-A39	**Tatjana Kovačević, Krunoslav Nujić, Milan Mesić** Chemical proteomics approach for detection of potential off-targets associated with the EGFRi erlotinib
P-A40	**Jelena Kovačić, Daniela Amidžić Klarić, Mario-Livio Jeličić, Matea Perko, Ilija Klarić, Snježana Zubčić, Ana Mornar** Oral dosage testing of dietary supplements used in the treatment of IBD according to the United States Pharmacopeia
P-A41	**Luka Krstulović, Marijana Leventić, Ljubica Glavaš-Obrovac** Novel 7-chloro-4-aminoquinoline-benzimidazole hybrids as inhibitors of cancer cells growth
P-A42	**Jurij Lah, Domen Oblak, San Hadži, Črtomir Podlipnik** Describing G-quadruplex DNA stability phase space
P-A43	**Ivana Landeka, Marina Ratkaj** API cocrystal formation: evaluation of COSMOtherm predictions
P-A44	**Jasmina Lapić, Ivana Kuzman, Ruža Frkanec, Leo Frkanec, Valerije Vrček, Senka Djaković** Synthesis and biological evaluations of ferrocene-pyrimidine hybrids
P-A45	**Vilma Lovrinčević, Dragana Vuk, Irena Škorić, Nikola Basarić** Photoheterolysis reactions of meta-substituted aminonaphthalene photocages
P-A46	**Petra Maleš, Danijela Bakarić** The signature of inverse hexagonal phase of phosphoethanolamine lipids

P-A47	**Nives Matijaković Mlinarić, Anamarija Zore, Aleksander Učakar, Anže Abram, Andrijana Sever Škapin, Klemen Bohinc** ZnO and CuO nanomaterials for antibacterial application
P-A48	**Mateja Matišić, Matija Grdičak** Organocatalytic synthesis of isoindolinone derivatives containing 3-alkyl tetrasubstituted stereogenic center
P-A49	**Dario Matulja, Gabrijela Matijević, Sanja Babić, Petra Grbčić, Krunoslav Bojanić, Sylvain Laclef, Ozren Jović, Tomislav Šmuc, Iris Car, Mirela Sedić, Rozelindra Čož-Rakovac, Sandra Kraljević Pavelić, Dean Marković** Bioprospecting of the Adriatic coral *Eunicella cavolini*
P-A50	**Mia Mesić, Tin Klačić, Davor Kovačević** Effect of divalent cations on formation and properties of polyelectrolyte nanofilms: Robot side of the story
P-A51	**Milena Mlakić, Ilijana Odak, Danijela Barić, Borislav Kovačević, Lajos Fodor, Ottó Horváth, Irena Škorić** Resveratrol hybrids as cholinesterase inhibitors and antioxidants: synthesis, bio-metal chelating capability and computational study
P-A52	**Zvonimir Mlinarić, Katarina Sladonja, Lu Turković, Miranda Sertić** Optimization of separation of six anticancer drugs by micellar electrokinetic chromatography-tandem mass spectrometry using a volatile surfactant
P-A53	**Matija Modrušan, Emilija Petrović Hađar, Lucija Glazer, Mirko Duvnjak Nikolina Vidović, Nikola Cindro, Giovanna Speranza, Vladislav Tomišić, Gordan Horvat** Affinity of linear and cyclic peptides towards bivalent cations
P-A54	**Krešimir Molčanov, Lidija Molčanov, Dijana Žilić, Luka Pavić, Marijana Jurić** Charge transfer between transition metal and quinone through a π-hole interaction
P-A55	**Danijela Musija, Vladimir Damjanović, Blaženka Foretić, Dubravka Matković-Čalogović** Synthesis and characterization of thioamide pentacyanoferrate(III) complexes
P-A56	**Dragana Mutavdžić Pavlović, Lu Turković, Zvonimir Mlinarić, Kristina Javorić, Juraj Vuić, Anamarija Skenderović, Sandro Makarić, Vladimir Radić, Tajana Silovski, Miranda Sertić** Preparation of molecularly imprinted polymers for the extraction of fulvestrant from human plasma samples
P-A57	**Danijel Namjesnik, Tea Juračić, Eva Josić, Tajana Begović** Adsorption of polyions on TiO_2 surface
P-A58	**Marko Novaković, Đani Škalamera** Synthesis of D-glucose and cholesterol conjugate for targeted delivery of pharmaceuticals by modified liposomes
P-A59	**Mario Pajić, Manda Ćurić, Marina Juribašić Kulcsár** Solid-state synthesis and catalytic potential of dicyclopalladated azobenzenes
P-A60	**Lea Pašalić, Danijela Bakarić, Qiqian Liu, Marc Lamy de la Chapelle** Physical-chemical properties of DPPC liposomes in the presence of gold nanoparticles aggregates
P-A61	**Marija Paurević, Aleksandra Maršavelski, Ranko Stojković, Rosana Ribić** Synthesis and immunostimulating activity of dimannosylated desmuramyl peptide

P-A62	**Vesna Petrović Peroković, Željka Car, Nikola Cindro, Barbara Panić, Ivan Kodrin, Ivana Biljan** Synthesis and characterization of aromatic trinitroso compounds – potential building blocks for new porous organic polymers
P-A63	**Petra Petrović, Patricia Tikvenjak, Snežana Miljanić** SERS spectra of berberine and papaverine
P-A64	**Martina Piškor, Silvio Jakopec, Marijana Buljubašić, Lejla Ferhatović Hamzić, Mirela Sedić, Berislav Perić, Ljubica Glavaš-Obrovac, Srećko Kirin, Silvana Raić-Malić** Synthesis, characterization and antiproliferative activity of coumarin-based derivatives and their metal complexes
P-A65	**Marina Poljak, Tomica Hrenar, Ines Primožič** Deep reinforcement learning classification model for fragrant compounds based on ATR spectroscopy
P-A66	**Kristina Pregiban, Lidija Brkljačić, Ivanka Jerić** Stability of water-soluble vitamins in enteral food
P-A67	**Katarina Radman, Ivana Leščić Ašler, Zoe Jelić Matošević, Ivo Crnolatac, Ivo Piantanida, Branimir Bertoša** Influence of Mn^{2+} ion binding on structural changes in metalloregulatory proteins SloR (*S. mutans*) and ScaR (*S. gordonii*)
P-A68	**Vesna Rastija, Karolina Vrandečić, Jasenka Ćosić, Maja Karnaš, Maja Molnar** Antifungal effects of fluorinated pyrazole aldehydes: Biological activity evaluation and molecular docking studies
P-A69	**Magda Relić, Mario Herceg, Mihajlo Banjanac, Vedrana Radovanović, Leentje Persoons, Dirk Daelemans, Livio Racané** Synthesis of novel benzothiazole azo dyes and *in vitro* biological evaluation of antibacterial and antitumor activity
P-A70	**Antonio Sabljić, Doris Crnčević, Matilda Šprung, Renata Odžak** The influence of amide group addition on the bioactivity of new soft 3-amidoquinuclidine QACs
P-A71	**Davor Šakić, Gabrijel Zubčić, Jiangyang You, Erim Bešić** visualEPR: free, online and open-source visualisation and simulation software for fast processing of EPR spectra
P-A72	**Mirela Samardžić, Mateja Peršić, Aleksandar Széchenyi, Mateja Budetić** Applicability of the new solid-state sensor based on functionalized carbon nanomaterials for promethazine hydrochloride determination
P-A73	**Marcela Šišić, Tomislav Friganović, Mario Gabričević, Leo Frkanec, Ruža Frkanec** SPRi study of *N*-acetyl glucosamine specific lectin interactions with peptidoglycan monomer functionalized gold biochips
P-A74	**Elpida Skolia, Christoforos G. Kokotos** The reaction between alkenes and maleimides: [2+2] cycloadditions using UVA or visible light
P-A75	**Ivana Sokol, Hanja Mlinar, Dajana Kučić Grgić, Tatjana Gazivoda Kraljević** Synthesis and antibacterial activity of new hydrazone-bridged benzothiazole derivatives
P-A76	**Željka Soldin, Ozana Mišura, Antonela Bikić, Marijana Đaković** Mechanical responsiveness of crystals of copper(II) coordination polymers

P-A77	**Monika Šoltić, Nikola Baran, Goran Dražić, Goran Štefanić, Marijan Marciuš, Mile Ivanda, Marijan Gotić** Synthesis and gas sensing properties of platinum nanoparticles dispersed on α-Fe_2O_3 and Fe_3O_4 supports
P-A78	**Leo Štefan, Ana Čikoš, Ivica Đilović** Reactivity of 2,3-dihydro-1-methyl-2*H*-benzimidazole-2-thione towards 1,2-dichloroethane
P-A79	**Naya A. Stini, Petros L. Gkizis, Christoforos G. Kokotos** Bio-based solvents for cross-coupling reactions
P-A80	**Domagoj Šubarić, Maja Karnaš, Ivana Majić, Vesna Rastija** Triazole derivatives as potential eco-friendly pesticides – an *in vitro* and *in vivo* study
P-A81	**Lana Topalović, Petra Gurović, Aleksandar Bajrović, Ivan Vrban, Damir Šahnić, Jasna Prlić Kardum** Methods of enhancing physical properties of active pharmaceutical ingredients
P-A82	**Nikola Topolovčan, Mateja Matišić, Arben Beriša, Danijel Glavač, Matija Gredičak** Organocatalytic strategies for the installation of the congested stereogenic centers in isoindolinone structural cores
P-A83	**Valentina Travančić, Domagoj Prlić, Aleksandra Sander** The influence of antisolvent addition on powder properties of API
P-A84	**Lu Turković, Martina Papić, Zvonimir Mlinarić, Tajana Silovski, Miranda Sertić** Evaluation of extraction efficacy and matrix effects for six anticancer drugs in human plasma using different sample preparation techniques with LC-MS
P-A85	**Marko Viskić, Ana Rapljenović, Neven Cukrov, Vlado Cuculić** Trace metal adsorption on plastic pellets and fibers in the marine and estuarine environment
P-A86	**Leonarda Vugrin, Maria Carta, Francesco Delogu, Ivan Halasz** Hammett correlation and reaction mechanisms in mechanochemical imine formation
P-A87	**Marina Zekić, Ani Radonić** Ultrasonic solvent extraction of traditional Croatian cheeses matured in a lamb skin sack
P-A88	**Pavo Živković, Borna Miklošević, Aleksandar Széchenyi** Application of narrow-gap electrodes for electrochemical determination of antioxidants in high-resistance solvents
P-A89	**Gabrijel Zubčić, Maria Kolympadi Marković, Dean Marković, Tomislav Portada, Erim Bešić, Davor Šakić** Detecting elusive radicals using spin traps. Case study on Hofmann-Löffler-Freytag reaction
P-A90	**Ida Boček Pavlinac, Lucija Hok, Tana Tandarić, Marijana Hranjec, Robert Vianello** Photophysical and computational study of iminocoumarin and imidazo[4,5-*b*] pyridines conjugates as novel pH sensitive probes

CHEMICAL AND BIOCHEMICAL ENGINEERING

P-B1	**Jelena Avdalović, Tatjana Šolević Knudsen, Biljana Dojčinović, Vesna Conić, Jun Yao, Jelena Milić, Mila Ilić, Miroslav M. Vrvić** Two-stage process for extraction useful metals from a polymetallic ore flotation concentrate: a laboratory study
P-B2	**Matea Bajo, Mia Radović, Marina Cvjetko Bubalo, Ana Jurinjak Tušek, Anita Šalić, Bruno Zelić, Dunja Šamec** Development and optimization of bioflavonoids extraction from ginkgo (*Ginkgo biloba* L.) leaves using deep eutectic solvents
P-B3	**Mladen Brnčić, Iva Šarić, Mario Božić, Domagoj Gabrić, Mirna Tadić, Damir Ježek** The physicochemical characteristics of non-thermally treated fruit juice
P-B4	**Filip Car, Domagoj Vrsaljko, Zoran Gomzi, Vesna Tomašić** Analysis and modelling of a 3D-printed ceramic monolithic reactor for oxidation of aromatic volatile organic compounds
P-B5	**Ivana Ćevid, Nevena Milčić, Maja Majerić Elenkov, Zvjezdana Findrik Blažević** Optimization of the biocatalytic cascade synthesis of (*R*)-3-hydroxy-γ-butyrolactone by means of kinetic modelling
P-B6	**Marija Ćosić, Antonija Čelan, Mia Ramljak, Nenad Kuzmanić** Influence of ultrasound amplitude on borax nucleation kinetics in a batch crystallizer at different cooling rates
P-B7	**Matko Erceg, Matej Marić, Dubravka Bojanić Varezić, Pero Tutman** Characterization of microplastics from Zaglav beach on the island of Vis
P-B8	**Matea Gavran, Monika Klier, Nenad Bolf, Damir Šahnić** Raman spectroscopy for ceritinib solution concentration and slurry density estimation
P-B9	**Mia Gotovuša, Ivona Pečurlić, Valentino Petrić, Paula Huzjak, Marta Krasić, Martina Zadravec, Lucija Konjević, Fabio Faraguna** The influence of the reaction parameters and the feedstock type on the synthesis of fatty acid propyl, butyl, isobutyl, pentyl, and isopentyl esters
P-B10	**Petra Gurović, Lana Topalović, Aleksandar Bajrović, Damir Šahnić, Aleksandra Sander** Continuous crystallization: Improving product quality and consistency in the pharmaceutical industry
P-B11	**Sofija Ivković, Maša Safundžić Kučuk, Leo Štefan** Particle size analysis in pharmaceutical suspensions: Use of different methods from active pharmaceutical ingredient to final formulation
P-B12	**Jelena Jakić, Miroslav Labor, Marija Grgičević, Vanja Martinac, Anđela Čović** Effect of surfactant addition on precipitation of magnesium oxide from sea bittern
P-B13	**Marisa Koci, Lorena Dauti** Extraction of *Pinus halepensis* essential oil and characterization by IR and UV-Vis spectroscopy

P-B14	**Krešimir Kos, Nevena Milčić, Maja Majerić Elenkov, Zvjezdana Findrik Blažević** Synthesis of valuable building block with immobilized biocatalyst in rotating bed reactor
P-B15	**Želimir Kurtanjek** Structural equation modelling (SCM) and causality of chemical engineering models
P-B16	**Emerik Leaković, Isabel Their, Karsten Siems, Lorena Mateša, Martina Sudar, Zvjezdana Findrik Blažević, Ana Vrsalović Presečki** Optimizing the reaction conditions of enzyme-catalysed betuloside hydrolysis
P-B17	**Goran Lukač, Žarko Olujić, Igor Dejanović** Dual condenser configuration of a four-product dividing wall column
P-B18	**Marijan-Pere Marković, Leonarda Bambić, Ivan Karlo Cingesar, Elizabeta Forjan, Domagoj Vrsaljko** Preparation and characterization of litmus-based sensor films
P-B19	**Lorena Mateša, Emerik Leaković, Ivana Bigor, Martina Sudar, Ana Vrsalović Presečki, Zvjezdana Findrik Blažević** Synthesis of galactooligosaccharides in batch and enzyme membrane reactor
P-B20	**Mihovil Medić, Lucija Rebrović, Fabio Faraguna, Elvira Vidović, Ante Jukić** Effect of functionalised groups containing oxygen or nitrogen on lubricity of methacrylate based copolymer solutions in lubricant oil
P-B21	**Dajana Mikić, Helena Otmačić Ćurković** The efficiency of organic coating protection of bronze samples exposed to outdoor environment and in simulated laboratory conditions
P-B22	**Ana Petračić, Antonela Šipek, Aleksandra Sander** Characterisation and purification of crude glycerol after biodiesel production
P-B23	**Ivana Petrić, Sara Hriberski, Pavo Jakešević, Dino Skendrović, Ana Vrsalović Presečki** Optimization of aldolase immobilization on magnetic nanoparticles
P-B24	**Mateja Prpić, Joško Barbarić** The effect of particle size and morphology on *in vitro* drug release
P-B25	**Lucija Rebrović, Leona Krmpotić, Mihovil Medić, Fabio Faraguna, Ante Jukić** Thermal and lubricating properties of canola oil nanofluid and corresponding biodiesel-based nanofluid
P-B26	**Marko Rogošić, Anja Damjanović, Marina Cvjetko Bubalo, Tomislava Vukušić Pavičić, Višnja Stulić, Mia Ivanov** Determining solid liquid equilibria in some systems comprising common osmolytes by differential scanning calorimetry
P-B27	**Josip Sacher, Matea Gavran, Nenad Bolf, Željka Ujević Andrijić** The rapid development of calibration models for supersaturation tracking using *in situ* ATR-FTIR spectroscopy
P-B28	**Damir Šahnić, Ivan Vrban, Petra Gurović, Aleksandar Bajrović, Lana Topalović** Utilization of in-line process microscopy in crystallization process development of active pharmaceutical ingredients
P-B29	**Aleksandra Sander, Katarina Belošević, Bruna Babić Visković, Ana Petračić, Danijela Ašperger** Microwave and ultrasound assisted extraction of piperine from different piper species
P-B30	**Katarina Sokač, Luka Baždarić, Jakša Devčić, Krunoslav Žižek** By mechanochemical activation to a drug with an improved solubility and release rate

P-B31	**Martina Šrajer Gajdošik, Marko Šimić, Marija Paurević, Elvira Kovač-Andrić, Dajana Gašo-Sokač, Djuro Josić** *Yersinia enterocolitica* proteome profiling after treatment with disinfectants based on quaternary ammonium salts
P-B32	**Marija Trkmić, Jasna Petranović, Marija Fucak, Marijana Zlatec** Application of spectrometric methods in determining the composition of ceramics
P-B33	**Ana Tutić, Viktorija Prevarić, Martina Miloloža, Šime Ukić, Matija Cvetnić, Dajana Kučić-Grgić, Marinko Markić** Photo-oxidative degradation of phenol, cyanide and thiocyanate by UV-C/H_2O_2 and UV-C/$S_2O_8^{2-}$ processes
P-B34	**Željka Ujević Andrijić, Nikola Rimac** Comparison of NTU and neural network models for fouling monitoring of heat exchangers in the preheat train section of a Crude Distillation Unit
P-B35	**Elvira Vidović, Roko Blažic** Cellulose-based hydrogels modified with poly(vinylpyrrolidone)
P-B36	**Jelena Vladić, Martina Kovač, Igor Jerković, Stela Jokić, Alexandre Paiva, Ana Rita Duarte, Ivona Kujundžić, Valentina Pavić** Supercritical CO_2 and deep eutectic solvents for sequential extraction of *Lavandula stoechas* L. and attainment of antioxidant and antibacterial agents
P-B37	**Kristina Zagajski Kučan, Marko Rogošić** Betaine:glycerol deep eutectic solvent modified with zinc chloride for extractive gasoline purification
P-B38	**Krunoslav Žižek, Paula Priselec, Jelena Barač, Katarina Sokač** By the principles of green chemistry to a drug with improved properties
P-B39	**Iva Zokić, Jasna Prlić Kardum, Katarina Mužina** Selecting solvent systems for spherical crystallization of API

MATERIALS

P-C1	**Branka Andričić, Danijela Dragićević, Irena Krešić, Nataša Stipanelov Vrandečić** Preparation of poly(3-hydroxybutyrate) plasticized with mixture of methyl esters derived from waste edible oils
P-C2	**Rafael Anelić, Fabio Faraguna, Ante Jukić** Thermal conductivity, electrical resistivity and dynamic mechanical analysis of polyester-imide resin/nanocellulose composites
P-C3	**Marin Božičević, Lucija Fiket, Zvonimir Katančić** Synthesis and characterization of stretchable and conductive PEDOT-*g*-PCL copolymers for wearable electronics
P-C4	**Matej Bubaš, Ivana Fabijanić, Adriana Kenđel, Snežana Miljanić, Maria Chiara Spadaro, Jordi Arbiol, Vesna Janicki, Jordi Sancho Parramon** Improving stability and SERS performance of Au-Ag nanoislands

P-C5	**Matej Ercegović, Filip Brleković, Deni Hršak, Juraj Šipušić** Porosity – a key parameter of acoustic wood wool cement board
P-C6	**Lucija Fiket, Marin Božičević, Anamarija Horvat, Zvonimir Katančić** Development of new generation of stretchable conductive polymers for wearable flexible electronics
P-C7	**Mateja Filković, Josip Bibić, Domagoj Vrsaljko** Problems in stability of the inner surface of glass vials leading to glass leaching and delamination
P-C8	**Petra Gorišek, Martina Filipović, Angela Kapitanović, Helena Otmačić Ćurković** A study on the influence of waterborne coating application parameters on its protective properties
P-C9	**Mila Ilić, Tamara Tadić, Sandra Bulatović, Bojana Marković, Aleksandra Nastasović** Validation of an adsorption kinetic model for lindane removal by a porous polymer
P-C10	**Hrvoje Ivanković, Leonard Bauer, Dajana Milovac Lerga, Marica Ivanković** Hydrolytic degradation of poly(lactic acid)/hydroxyapatite composites
P-C11	**Dražan Jozić, Anđela Čović** Synthesis of nanostructured TiO_2 and its application in self-crosslinking water-dispersive acrylic coatings
P-C12	**Dora Kolman, Ivan Gabrijel, Petra Štefanec, Šime Pulić** Analysis of chloride penetration in concrete exposed to marine environment
P-C13	**Lucija Konjević, Fabio Faraguna, Petar Ilinčić** Effects of higher alcohol / diesel blends on engine performance
P-C14	**Ivana Landripet, Josip Bronić** Combining hierarchization and cations insertion in mordenite
P-C15	**Sanja Lučić Blagojević, Martina Zeljko** Eco-friendly UV-protective polyacrylate/rutile TiO_2 coatings
P-C16	**Gabrijela Ljubek, Magdalena Kralj, Marijana Kraljić Roković** Green synthesis of $Ti_3C_2T_x$ MXene
P-C17	**Branimir Ljubičić, Anđela Čović, Dražan Jozić** The impact of reducing CO_2 emissions in the industrial production of Portland cement clinker with increased sulfur content
P-C18	**Vilko Mandić, Ivana Panžić, Marijana Kraljić-Roković** Indirect evaluation methodology of 1D self-organised charge transfer oxide thin films
P-C19	**Anna Melekhova, Matthew Ellis, Ljiljana Fruk** Flavin-clay hybrid materials for photodegradation of dye pollutants
P-C20	**Lidija Molčanov, Lidija Androš Dubraja, Dijana Žilić, Krešimir Molčanov, Marijana Jurić** Charge transfer in bimetallic oxalate-bridged coordination polymer with the $[Fe(C_2O_4)_3]^{3-}$ core induced by light irradiation
P-C21	**Branka Mrduljaš, Irina Pucić, Katarina Didulica, Ana Baričević** Alkaline resistance of recycled tyre polymer fibres for cement composites
P-C22	**Ena Pezić, Jelena Vrhovec, Branka Mihaljević, Katarina Marušić** Effect of the fatty acid double bond on the properties of crosslinked nanocoatings on metals

P-C23	**Teodora Prebeg, Dinka Omerčić, Valentina Erceg, Gordana Matijašić** Effect of sonication on decellularization of porcine liver with ionic detergent
P-C24	**Floren Radovanović-Perić, Vilko Mandić, Dragana Vuk, Thomas Rath** A GISWAXS study on supramolecular assembly of small molecule electron donating photoabsorbers
P-C25	**Matea Raić, Krešimir Kvastek, Mile Ivanda** The effects of silicon anode thickness on electrochemical characteristics of Li-ion battery
P-C26	**Iva Rezić, Maja Somogyi Škoc, Pierre-Alexis Mouthuy** Antimicrobially modified continuous yarns from electrospun fibers
P-C27	**Marko Rukavina, Arijeta Bafti, Lucija Janković-Miloš, Ines Ljubičić, Andrea Tomić, Vilko Mandić** Mechanochemical approach for the synthesis of LTA and SOD zeolites from (meta)kaolin
P-C28	**Silvija Šafranko, Šimun Mandić, Drago Šubarić, Stela Jokić** Quantum yield optimization of hybrid carbon quantum dots and their application as sensing nanomaterial
P-C29	**Marina Samardžija, Vesna Alar, Ivan Stojanović, Marin Kurtela** Application of EIS and SECM studies for investigation of anticorrosion properties of epoxy coatings
P-C30	**Petra Štefanec, Ivan Gabrijel, Dora Kolman, Šime Pulić** SEM-EDS analysis of powder from concrete elements exposed to the marine environment
P-C31	**Ivan Stojanović, Mirta Logar, Ivan Fatović, Vesna Alar, Marin Kurtela, Ivan Juraga** Physical and chemical properties of differently dried topcoats
P-C32	**Kristina Sušac, Bruno Bušić, Lucija Svorcina, Elvira Vidović, Ante Jukić** Mechanical properties of prepared methacrylate copolymer nanocomposites, synthesized in a green solvent cyrene™
P-C33	**Edi Topić, Pavla Šenjug, Dario Barišić, Ivor Lončarić, Damir Pajić, Mirta Rubčić** Dimensionality-dependent magnetic order in hybrid anisidinium tetrachlorocuprates(II)
P-C34	**Martina Vrankić, Takeshi Nakagawa, Jasminka Popović, Yang Ding** Capturing the pressure driven PXRD features of selected inorganic and hybrid materials
P-C35	**Marina Vukoje, Ivana Bolanča Mirković, Rahela Kulčar, Tomislav Cigula, Katarina Itrić Ivanda** Thermochromic flexografic prints in paper recycling process
P-C36	**Juro Živičnjak, Antoneta Tomljenović** Comparative study of socks made of different cellulose fibers
P-C37	**Marko Zubak, Irena Ivanišević, Domagoj Vrsaljko, Petar Kassal** Optimization of thermal and photothermal sintering of inkjet printed amphiphilic silver nanoparticles on glass surfaces

ENVIRONMENTAL PROTECTION

P-D1	**Danijela Ašperger, Bruna Babić Visković, Anamaria Maslač** Application of simulated solar radiation and hydrogen peroxide to remove xenobiotics from aqueous solutions
P-D2	**Bruna Babić Visković, Danijela Ašperger, Gracia Vukorepa** Batch biodegradation of xenobiotics
P-D3	**Irena Bates, Ivana Plazonić, Valentina Radić Seleš, Katja Petric Maretić, Maja Rudolf** Evaluation of printability of paper substrates with agro-residues for graphic products
P-D4	**Anita Ivanković, Marina Marić, Danijela Petrović, Stanislava Talić, Anita Martinović Bevanda** Application of the prognostic model in the evaluation of the water quality of Lake Blidinje (B&H)
P-D5	**Ivana Jakovljević, Zdravka Sever Štrukil, Gordana Pehnec, Marko Gerić, Katarina Matković, Mandica Sanković, Antun Šumanovac, Goran Gajski** Identification of dominant PAHs sources at three different urban sites: urban background, urban residential, urban industrial
P-D6	**Andreja Jurič, Blanka Tariba Lovaković, Nataša Brajenović, Irena Brčić Karačonji, Ekaterina Šprajc, Sandy Lovković, Jasna Jurasović** Effects of storage conditions on the migration of phthalates from plastic packaging to bottled natural mineral water
P-D7	**Zorana Kljaković-Gašpić, Tatjana Orct, Ankica Sekovanić, Marijan Sudić, Ekaterina Šprajc, Jasna Jurasović** Influence of storage conditions on the migration of metal(loid)s from polyethylene terephthalate (PET) packaging into bottled drinking water
P-D8	**Mario Kovač, Vesna Ocelić Bulatović, Antun Jozinović, Dajana Kučić Grgić, Drago Šubarić** Bioplastic based on thermoplastic potato starch citrate: Thermal properties
P-D9	**Dajana Kučić Grgić, Martina Miloloža, Mirela Kovačević, Kristina Bule Možar, Viktorija Martinjak, Matija Cvetnić, Šime Ukić, Marinko Markić, Vesna Ocelić Bulatović, Tomislav Bolanča** Optimization of microplastics polystyrene biodegradation by *Bacillus subtilis* isolated from compost sample
P-D10	**Marija Kuštro, Dubravka Tavra, Kristina Bule, Martina Miloloža, Dajana Kučić Grgić** Assessment of the ecotoxicological effects of microplastics with the study of a bioremediation strategy for its removal from the environment
P-D11	**Marinko Markić, Kristina Bule Možar, Viktorija Martinjak, Martina Miloloža, Matija Cvetnić, Tomislav Bolanča, Dajana Kučić Grgić, Šime Ukić** Comparison of different yeast cultures in the biodegradation of polyvinyl chloride microplastics
P-D12	**Viktorija Martinjak, Martina Miloloža, Matija Cvetnić, Marinko Markić, Šime Ukić, Dajana Kučić Grgić, Josipa Papac Zjačić, Hrvoje Kušić, Tomislav Bolanča** Interreg Danube Hazard m^3c – key project findings concerning current national policies

P-D13	**Kristina Miklec, Ivan Karlo Cingesar, Ivana Grčić, Domagoj Vrsaljko** Determination of perfluorooctane sulfonic acid (PFOS) by-products after TiO_2 solar photocatalysis over 3D-printed static mixers
P-D14	**Jelena Milić, Nikoleta Lugonja, Tatjana Šolević Knudsen, Jelena Avdalović, Takeshi Nakano, Mila Ilić, Miroslav M. Vrvić** Determination and assessment of new-born dietary intake of polychlorinated biphenyls in commercial infant formulae
P-D15	**Martina Miloloža, Viktorija Martinjak, Matija Cvetnić, Marinko Markić, Šime Ukić, Dajana Kučić Grgić, Josipa Papac Zjačić, Hrvoje Kušić, Tomislav Bolanča** Tackling hazardous substances pollution in the Danube River Basin by Measuring, Modelling-based Management and Capacity building
P-D16	**Tatjana Orct, Ankica Sekovanić, Maja Lazarus, Branko Petrinec, Jasminka Senčar, Davor Rašeta, Nikica Šprem, Ivan Širić** Lead, cadmium and radionuclide caesium (^{137}Cs) in wild growing edible *Boletus* mushrooms from different areas of Croatia
P-D17	**Katja Petric Maretić, Maja Rudolf, Valentina Radić Seleš, Ivana Plazonić, Irena Bates** FTIR analysis of prints on paper substrates with virgin straw fibres
P-D18	**Marin Popović, Tayebeh Sharifi, Marin Kovačić, Igor Peternel, Hrvoje Kušić, Ana Lončarić Bozić** Influence of photodeposited silver and iron nanoparticles onto $BiVO_4$ surface on ciprofloxacin photocatalytic degradation mechanism
P-D19	**Irina Pucić, Ana Rapljenović, Željko Kwokal, Vlado Cuculić** An attempt to quantitatively analyse submillimeter microplastics by DSC
P-D20	**Maja Rudolf, Irena Bates, Ivana Plazonić, Valentina Radić Seleš, Katja Petric Maretić** Comparison of the mechanical resistance of prints obtained by different printing techniques on papers containing cereal straw pulp
P-D21	**Ankica Sekovanić, Tatjana Orct, Maja Lazarus, Jasminka Senčar, Branko Petrinec, Davor Rašeta, Nikica Šprem, Ivan Širić** Assessment of toxic metal(loid)s content and ^{137}Cs activity concentration in *Boletus* mushrooms obtained from Croatia and Eastern European countries
P-D22	**Ana Šket, Katarina Muzica, Ana Čurić, Marija Vuković Domanovac** Potential of environmental bacterial culture for the biodegradation of xenobiotics
P-D23	**Andrea Špoljarić, Elvira Vidović** Using nZVI particles and hydrogel incorporated nZVI for amoxicillin removal
P-D24	**Tin Takač, Milena Jadrijević-Mladar Takač, Tomislav Jednačak** Prediction of environmental microbial biotransformation of azithromycin, its thiosemicarbazone conjugates and their precursors
P-D25	**Blanka Tariba Lovaković, Andreja Jurič, Nataša Brajenović, Irena Brčić Karačonji, Ekaterina Šprajc, Sandy Lovković, Jasna Jurasović** Phthalate esters in polyethylene terephthalate (PET) bottled water stored under common conditions
P-D26	**Kristina Tolić Čop, Dragana Mutavdžić Pavlović, Kristina Javorić** Competitive sorption of imatinib and torasemide on the TiO_2 photocatalyst

P-D27	**Magdalena Ujević Bošnjak, Iva Šušić, Majda Meden, Silvio Giorgolo, Neven Hržić, Filip Gajšak, Valentina Goričanec** Big data analytics to understand and estimate the risks in drinking water distribution networks
P-D28	**Mirela Uzelac, Barbara Sladonja, Josipa Bilić, Ivana Šola, Maja Mikulič Petkovšek, Slavica Dudaš, Danijela Poljuha** *Robinia pseudoacacia* L. – invasive alien species as a source of phytopharmaceuticals
P-D29	**Silva Žužul, Valentina Gluščić, Ivan Bešlić, Andrea Milinković, Abra Penezić, Sanja Frka** The impact of anthropogenic and natural sources on particle-bound metals at the middle Adriatic

EDUCATION

EP-1	**Lidija-Marija Tumir, Marijana Radić Stojković, Iva Orehovec, Danijel Glavač, Tomislav Portada, Ivo Crnolatac** Chemistry workshops as part of the Synecological STEM EDUCATION project in Klinča
EP-2	**Iva Turkalj, Andrea Kneževič, Ružica Šoić, Renata Kobetić** Multidisciplinary synthesis of small researchers

Laboratorijski pribor & oprema

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Firma **Jasika** osnovana je 1997.godine sa sjedištem u Zagrebu i podružnicom u Splitu, te sestrinskim firmama na području Bosne i Hercegovine, Slovenije i Srbije. Više od 20 godina usko je specijalizirana za zastupanje, uvoz, distribuciju i održavanje razne laboratorijske opreme i usluga svjetskih renomiranih proizvođača. Danas zapošljava oko 40 visoko obrazovanih djelatnika, uz organizacijsku strukturu podijeljenu na 4 odjela. Odjel za medicinske proizvode, Odjel medicinske dijagnostike, Farmaceutski odjel povezan s lijekovima te Analitički odjel na koji se uspješno proširila prije otprilike četiri godine.

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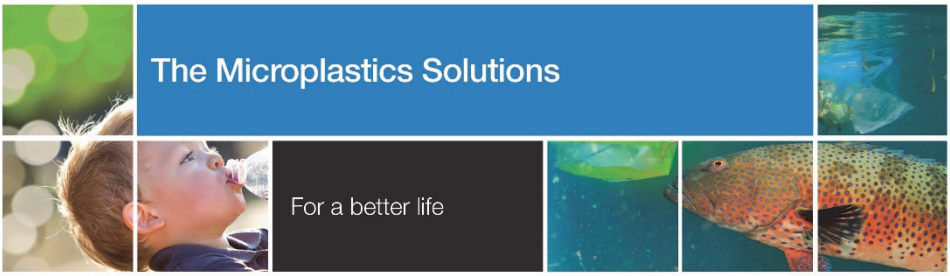

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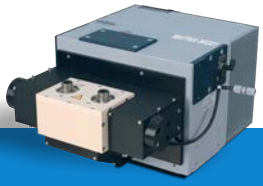

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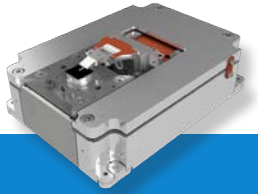

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- Mapiranje piezoelektričnosti

ELEKTRIČNA SVOJSTVA

- Mapiranje električne vodljivosti
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Published by:
Croatian Society of Chemical Engineers
March, 2023

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