



OVERALL

programme

Sunday, June 26, 2022

17.00 – 19.00	Registration
19.00 – 21.00	Welcome party, Sheraton Grand Hotel, Powiśle 7, Krakow

Monday, June 27, 2022

08.00 – 9.00	Registration
09.00 – 09.15	Opening ceremony
09.15 – 11.10	SESSION I
11.10 – 11.30	 Coffee break
11.30 – 12.50	SESSION II
12.50 – 14.00	 Lunch break
14.00 – 15.10	SESSION III
15.10 – 15.30	 Coffee break
15.30 – 16.40	SESSION OF YOUNG SCIENTISTS I
16.40 – 17.00	 Coffee break

17.00 – 18.10

SESSION OF YOUNG SCIENTISTS II

19.00 – 21.00

International Scientific Committee Meeting

Tuesday, June 28, 2022

09.00 – 11.10

SESSION IV

11.10 – 11.30

 Coffee break

11.30 – 13.00

SESSION V

13.00 – 14.00

 Lunch break

14.00 – 15.40

SESSION VI

15.40 – 16.00

 Coffee break

16.00 – 17.00

POSTER SESSION

17.30 – 19.30

Krakow Old Town / Kazimierz sightseeing

Meeting place: Sheraton Grand Hotel, Krakow

Wednesday, June 29, 2022

7.20 – 17.30

One-day excursion Visiting “Wieliczka” Salt Mine and Royal Private Apartments, and Cathedral on the Wawel Hill. Meeting place: Sheraton Grand Hotel, Krakow

Thursday, June 30, 2022

09.00 – 11.10

SESSION VII

11.10 – 11.30

 Coffee break

11.30 – 13.05

SESSION VIII

13.05 – 14.10

 Lunch break

14.10 – 15.20

SESSION IX

19.00 – 22.00

Conference banquet

Pałac pod Baranami, Rynek Główny 27, Kraków
(Palace under the Rams, The Main Square 27, Krakow).
Meeting place: Sheraton Grand Hotel, Krakow
at 18.40

Friday, July 1, 2022

09.00 – 11.00

SESSION X

11.15 – 11.35

 Coffee break

11.35 – 12.30

CLOSING SESSION

12.10 – 12.30

Closing remarks

12.30 – 13.30

 Lunch



DETAILED

programme

Sunday, June 26, 2022

17.00 – 19.00 Registration

19.00 – 21.00 Welcome party, Sheraton Grand Hotel, Powiśle 7, Krakow

Monday, June 27, 2022

08.00 – 9.00 Registration

09.00 – 09.15 Opening ceremony

09.15 – 11.10

SESSION I

Purnendu Dasgupta, Paweł Kościelniak

09.15 OL Marek Trojanowicz

Impact of nanotechnology on progress of flow methods in chemical analysis

09.50 PL1 Manuel Miró, Enrique J. Carrasco, Michal Michalec, María Rosende, David J. Cocovi-Solberg

3D printed micro-FIA (3D- μ FIA): the fourth generation of flow analysis

10.25 KL4 Norio Teshima, Hiroya Murakami, Yoshinori Inoue

Solid-phase extractants with hydrophilic groups useful for flow analysis

10.50 IL1 Jaroon Jakmunee, Pijika Mool-am-kha, Nuntaporn Moonrungssee, Surin Saipanya

A novel flow injection electrochemical sensor based on CNT-Ni(OH)₂-CB/Nafion nanocomposites for evaluating xanthine oxidase inhibitory activity

11.10 – 11.30



11.30 – 12.50

SESSION II

Jaroon Jakmunee, Marcela Segundo

11.30 KL2 Magdalena Flont, Patrycja Sokołowska, Elżbieta Jastrzębska, Zbigniew Brzózka

Development of a functional three-dimensional model of cells in a flow-through microsystem to study a dynamic process in vitro

11.55 IL2 Łukasz Tymecki

As simple as possible but no simpler...

12.15 IL3 Maliwan Amatatongchai, Nongyao Nontawong, Purim Jarujamrus, Duangjai Nacapricha, Peter A. Lieberzeit

Smart electrochemical sensors for simultaneous determination of dual carcinogen oxidative stress biomarkers through core-shell molecularly imprinted polymers

12.35 OP1 Marek Dębosz, József Kozma, Radosław Porada, Marcin Wieczorek, Justyna Paluch, Róbert E. Gyurcsányi, Jan Migdalski, Paweł Kościelniak

3D-printed manifold integrating solid contact ion-selective electrodes dedicated to multicomponent urine analysis

12.50 – 14.00



14.00 – 15.10

SESSION III

Purim Jarujamrus, Sławomir Kalinowski

14.00 PL2 Victor Cerdà

Portable analytical photometric and fluorometric systems based on the use of 3D printed devices

14.35	OP2	<u>Jarda Ruzicka</u> <i>Flow analysis: journey from the continuous to programmable flow</i>
14.40	OP3	<u>Petr Chocholouš</u> , Jarda Ruzicka <i>Advances in flow injection are based on flow programming</i>
14.55	OP4	<u>Michał Michalec</u> , Łukasz Tymecki <i>Microcontrollers for flow analysis - DIY automation</i>
15.10 – 15.30		 Coffee break
15.30 – 16.40		SESSION OF YOUNG SCIENTISTS I Maliwan Amatatongchai, Łukasz Tymecki
15.30	YSP1	<u>Justyna Głowacka</u> <i>Flow analysis system for photometric determination of lactate dehydrogenase activity</i>
15.40	YSP2	<u>Justyna Skoczek</u> <i>Multicommutated flow analysis system for fluorometric determination of lipolytic activity</i>
15.50	YSP3	<u>Karolina Mermer</u> , Justyna Paluch, Justyna Kościelniak, Małgorzata Tomaszewska, Joanna Kozak <i>Simple automated flow system for determination of lithium in pharmaceutical samples and human blood serum</i>
16.00	YSP4	<u>Alejandra Vargas</u> , Julián Morales, Víctor Cerdà, Laura Ferrer, Edwin Palacio <i>Paper sensor-based method using a portable 3D-printed platform and smartphone assisted colorimetric detection for ammonia and sulfide monitoring in anaerobic digesters and wastewater</i>

16.10 YSP5 Francisca T. S. M. Ferreira, António O. S. S. Rangel, Raquel B. R. Mesquita

On-hand tool for CKD monitoring – design of a couple of μ PADs for ammonium and urea determination in saliva

16.20 YSP6 Juliana I. S. Aguiar, Susana O. Ribeiro, Andreia Leite, Maria Rangel, António O. S. S. Rangel, Raquel B. R. Mesquita

Development of a microfluidic paper-based analytical device (μ PAD) for iron determination in water

16.30 YSP7 Akarapong Prakobkij, Suchada Sukapanon, Suticha Chunta, Purim Jarujamrus

A fully high-throughput microfluidic paper-based analytical device fabricated by using an in-house computer-controlled X-Y knife plotter implemented with the deposition of reagents via technical pen-plotting for point-of-care testing

16.40 – 17.00

 Coffee break

17.00 – 18.10

SESSION OF YOUNG SCIENTISTS II

Burkhard Horstkotte, Petr Kubáň

17.00 YSP8 Izabela Lewińska, Miguel M. Erenas, Luis Fermín Capitán-Vallvey

Thread-based microfluidic sensor for non-invasive lithium monitoring

17.10 YSP9 Celestine Vubangsi Gemuh, Burkhard Horstkotte, Petr Solich

Functionalization of commercial hydrophilic-lipophilic balanced copolymer for automatic magnetic dispersive micro-solid phase extraction of surface water contaminants

- 17.20 YSP10 Anna Saldan, Małgorzata Król, Michał Woźniakiewicz, Paweł Kościelniak
Application of microemulsion electrokinetic capillary chromatography for the analysis of dyes extracted from polyester fibers
- 17.30 YSP11 Natalia Kaczmarczyk, Julita Cizewska, Natalia Treder, Natalia Miękus, Alina Plenis, Piotr Kowalski, Anna Roszkowska, Tomasz Bączek, Ilona Olędzka
The effects of imidazolium-based ionic liquids on the separation efficiency of biogenic amines during MEKC analysis
- 17.40 YSP12 Iwona Biel, Michał Woźniakiewicz, Jekaterina Mazina – Šinkar
Application of the capillary electrophoresis technique in real life
- 17.50 YSP13 Natalia Treder, Ilona Olędzka, Anna Roszkowska, Piotr Kowalski, Tomasz Bączek, Alina Plenis
Dynamic coating of phenyl-silica based stationary phases with ionic liquids used as mobile phase additives in the LC technique
- 18.00 YSP14 Ewelina Kowa, Anna Telk, Marcin Wieczorek
The benefits of coupling flow injection systems to ICP-MS in the analysis of biological samples

19.00 – 21.00

International Scientific Committee Meeting

Tuesday, June 28, 2022

09.00 – 11.10

SESSION IV

Zbigniew Brzózka, Manuel Miró

09.00 PL3 Petr Solich, Burkhard Horstkotte, Hana Sklenářová,
Petr Chocholouš, Dalibor Šatínský

Flow techniques for sample pretreatment

09.35 PL4 Yanlin Zhang, Robert W. Cattrall, Spas D. Kolev

*Polymer inclusion beads – a new tool for online
separation and preconcentration in flow analysis.
Determination of Au(III) by bead injection analysis*

10.10 KL3 Petr Kubáň, Vera Dosedelova, Petra Itterheimova,
Frantisek Foret

*Analysis of non-invasive biological samples
by microcolumn separation techniques for medical
diagnostics*

10.35 IL4 Hana Sklenářová, Martina Háková, Maite Aguinaga
Martínez, Burkhard Horstkotte, Petr Pávek, Manuel Miró,
Petr Solich

*Automation in sample manipulation for long-term
monitoring*

10.55 OP5 David Jaime Cocovi-Solberg, Stephan Schnidrig, Manuel
Miró, Stephan Hann

Heartcutless coupling of bead injection and HPLC

11.10 – 11.30

 Coffee break

11.30 – 13.00

SESSION V

Norio Teshima, Raquel Mesquita

- 11.30 SL Paweł Stalica
Miniaturization and integration of Shimadzu analytical tools. From balances to HRAM-DIA/DDA-MS/MS
- 11.55 KL1 Jean-Luc Boudenne, Robert-Peillard Fabien, Coulomb Bruno
3D-printing contributions to design of extraction modules
- 12.20 IL5 Petr Chocholouš, Matej Gužiňák, Kristýna Pavelková, Dalibor Šatínský, Petr Solich
Second dimension in sequential injection chromatography
- 12.40 IL6 Burkhard Horstkotte, Sercan Yıldırım, Kateřina Fikarová, Ivana H. Šrámková, David J. Cocoví-Solberg, Hana Sklenářová, Petr Solich
Lab-in-syringe automated sample preparation for HPLC

13.00 – 14.00

 Lunch break

14.00 – 15.40

SESSION VI

Jean-Luc Boudenne, Hana Sklenarova

- 14.00 PL5 Elias A. G. Zagatto, Fabio R. P. Rocha
Revisiting chemical derivatization in flow analysis
- 14.35 PL6 Marcela A. Segundo
Bead injection and sample preparation: a fruitful marriage?
- 15.10 OP6 Paweł Knihnicki, Karolina Reizer, Jolanta Kochana
Flow system for D3 vitamin electrochemical determination in pharmaceutical formulations

15.25 OP7 Tânia C. F. Ribas, Raquel B. R. Mesquita, António O.S.S. Rangel

Use of dimethylglyoxime as a chromogenic agent in a flow-based system for the determination of Ni(II) in recreational water

15.40 – 16.00



Coffee break

16.00 – 17.00

POSTER SESSION

Petr Chocholouš, Anna Telk

P1 Wanida Loetsaksrisakul, Natcha Kaewwonglom, Jantima Upan, Sam-ang Supharoek, Jaroon Jakmunee

Exploiting flow injection titration with CO₂ exclusion to determine free fatty acids at low concentrations

P2 Natcha Kaewwonglom, Somkid Pencharee, Suphakit Awiphan, Tinakorn Kanyanee, Jakarin Chawachate, Jeerayut Chaijaruwanich, Jaroon Jakmunee

A mono-segmented flow in hydrodynamic sequential injection system for online monitoring of ammonium in aquaculture

P3 Natcha Kaewwonglom, Miguel Oliver, David J. Cocovi-Solberg, Katharina Zirngibl, Dietmar Knopp, Jaroon Jakmunee, Manuel Miró

Kinetic flow-based method for plasmonic sensing of ultratraces of diclofenac in seawater

P4 Lea Kukoc-Modun, Maja Biocic, Josipa Dugeč, Njegomir Radić

Design of flow injection spectrophotometric system for penicillamine determination in pharmaceutical formulations

P5 Agnieszka Czajkowska, Dorota Korsak, Marta Fiedoruk-Pogrebniak, Robert Koncki, Kamil Strzelak

Flow analysis system for the control of microbial growth

- P6 Justyna Paluch, Karolina Mermer, Joanna Kozak
Determination of acid dissociation constant of selected biologically active compounds using a flow system with spectrophotometric detection
- P7 Marek Kozak, Joanna Kozak
Flow system for sulfur speciation analysis in bioethanol with ICP OES detection
- P8 Karolina Mermer, Justyna Paluch, Maciej Pitra, Joanna Kozak
Flow system for green and integrated sample pretreatment for the determination of antiviral drugs in surface waters
- P9 Karolina Mermer, Justyna Paluch, Daniel Kielbasa, Marek Kozak, Sławomir Kalinowski, Joanna Kozak
Automated flow system with a direct injection cell for simultaneous determination of Fe(II) and Fe(III) in beverages
- P10 Ana Machado, Adriano A. Bordalo, Raquel B. R. Mesquita
Sequential injection method for the biparametric determination of iodide and creatinine in urine
- P11 Maria J. M. Nunes, Raquel B. R. Mesquita, Tânia C. F. Ribas, António O. S. S. Rangel
Sequential injection method for the determination of macro and micro nutrients in soils
- P12 Andriy Vishnikin, Arina Skok, Yaroslav Bazel, Mohammed Al-Shwaiyat
Application of sequential injection lab-at-valve analysis to simultaneous spectrophotometric and/or kinetic determination of reducing agents, Si(IV) and P(V)
- P13 Alejandra Vargas, Víctor Cerdà, Gemma Turnes, Edwin Palacio
Determination of long-chain fatty acids in anaerobic digester supernatant and olive mill wastewater exploiting

- an in-syringe dispersive liquid-liquid microextraction and derivatization-free GC-MS method*
- P14 Petr Chocholouš, Jan Vinklár, Eva Semerádová, Petr Solich
Determination of creatinine in urine using online solid-phase extraction
- P15 Sumonmarn Chaneam, Petcharat Sirisakwisut, Thanikarn Sukaram, Nunnicha Janthon, Benjaporn Theerawutthisart, Jitnapa Sirirak, Apisake Hongwitayakorn
Green analytical methods for quantitative analysis using natural reagent: Application of orchid flower extract as acid-base indicator and as specific reagent for copper ion analysis in flow-based system
- P16 Lucie Krizova, Nikola Mannova, Denisa Smela, Zuzana Bílková, Burkhard Horstkotte, Zuzana Svobodová
Lab-in-syringe for automated miniaturized preparation of magnetic immunosorbent for SARS-CoV-2 isolation
- P17 Sercan Yıldırım, Kateřina Fikarová, Burkhard Horstkotte, Petr Solich
Lab-in-syringe automated tandem implementation of protein precipitation and homogenous liquid-liquid microextraction for the determination of beta-blockers in serum
- P18 Mateusz Stawicki, Łukasz Tymecki
Thermoforming as a tool for fluidic systems fabrication - pros and cons
- P19 Purim Jarujamrus, Thanyanat Saiboh, Nutthaporn Malahom, Wipark Anutrasakda, Sanoe Chairam, Maliwan Amatatongchai
Naked eye quantification of formalin in food samples by using a microfluidic thread-based analytical device (μ TAD)
- P20 Marcin Wieczorek, Marek Dębosz, Ewelina Kowa, Justyna Paluch, Jan Migdalski, Bogusław Baś, Paweł Kościelniak

The use of 3D printing technique for the construction of miniature potentiometric cells and flow injection systems for multi-component water analysis

P21 Małgorzata Gołąb, Małgorzata Majewska, Martyna Przybyłowska, Michał Woźniakiewicz

Determination of tropane alkaloids using portable CE-C⁴D system

P22 Marcelina Rusin, Aneta Woźniakiewicz, Justyna Dobrowolska-Iwanek, Agnieszka Zielińska, Michał Woźniakiewicz

Development of human milk oligosaccharides analysis using capillary electrophoresis with mass spectrometry (CE-MS)

P23 Petra Itterheimová, Petr Kubáň, František Foret

Open-source arduino-based data acquisition devices

P24 Jelena Gorbatšova, Vyacheslav Bolkvadze, Merike Vaher, Evelin Halling, Jekaterina Mazina-Šinkar

Cannabinoids (Δ^9 -THC and CBD) quantitative analysis by in-situ portable drug analyzer Drug Hunter

P25 Martin Růžička, Mihkel Kaljurand, Jelena Gorbatšova, Merike Vaher, Evelin Halling, Martin Jaanus, Jekaterina Mazina-Šinkar

The development of handheld automatic drugmeter for quantitative analysis of γ -hydroxybutyric acid

P26 Aneta Woźniakiewicz, Małgorzata Gołąb, Michał Woźniakiewicz

Isolation and determination of selected hydrophobic components found in the nutmeg. Comparison of methods

P27 Alicja Chromiec, Klaudia Ordon, Renata Wietecha-Postuszny

Application of the SPME / CE-MS method for the determination of popular drugs in the blood

P28

Paweł Świt, Joanna Orzeł

Application of new methodological approaches for simultaneous determination of bisphenols in receipts using HPLC-DAD

17.30 – 19.30

Krakow Old Town / Kazimierz sightseeing

Wednesday, June 29, 2022

7.20 – 17.30

One-day excursion

Visiting “Wieliczka” Salt Mine and Royal Private Apartments, and Cathedral on the Wawel Hill

Thursday, June 30, 2022

09.00 – 11.10

SESSION VII

Peter C. Hauser, Spas Kolev

09.00

PL7 Wolfgang Frenzel

The role of flow injection analysis and related techniques in atmospheric research and air pollution surveillance

09.35

PL8 António O. S. S. Rangel, Raquel Mesquita

Targeting the determination of iron using various flow-based approaches

10.10

KL5 Orawon Chailapakul, Yosita Panraksa, Suchanat Boonkaew, Charles S. Henry

The capillary-driven microfluidic device for point-of-care testing: Applications for biomarkers analysis

10.35 IL7 Raquel B. R. Mesquita, António O. S. S. Rangel
Tackling sample complexity in microfluidic paper-based devices

10.55 OP8 Akhmad Sabarudin, Noval Dwi Wijaya, Setyawan Purnomo Sakti, Aulanni'am, Hani Susianti, Nur Samsu, Agus Naba, Ika Oktavia Wulandari, Yudit Oktanella, Dewi Anggraeni
Instrumentation-free approach to rapid detection of albumin-to-creatinine ratio using paper-based analytical devices

11.10 – 11.30  Coffee break

11.30 – 13.05

SESSION VIII

Wolfgang Frenzel, Akhmad Sabarudin

11.30 KL6 Duangjai Nacapricha, Paithoon Prasertying, Thita Ninlapath, Nanthatchaphon Jantawong, Thinnapong Wongpakdee, Thitaporn Sonsa-ard, Kanchana Uraisin, Phoontawee Saetear, Prapin Wilairat
Exploiting vertical flow in paper material for the fabrication of a unique microfluidic lid for reproducible addition of a liquid reagent

11.55 IL8 Purim Jarujamrus
Nitrogen-Doped Carbon Dots (N-CDs) as peroxidase mimic coupled with a laminated three-dimensional microfluidic paper-based analytical device (laminated 3D- μ PAD) for smart sensing of total cholesterol from whole blood

12.15 IL9 Kamil Strzelak
Different approaches to nonenzymatic lactate determination in body fluids - the development of flow analysis system and paper-based analytical device

12.35 OP9 Joana L. A. Miranda, Raquel B. R. Mesquita, Edwin Palacio, José M. Estela, Víctor Cerdà, António O. S. S. Rangel

Chip-based spectrofluorimetric determination of iodine in a multi-syringe flow platform with and without in-line digestion

12:50 OP10 Phoonthawee Saetear, Nattinee Saechua, Kamonthip Sereenonchai

Sequential injection system for analysis of degree brix, orthophosphate and pH in raw sugarcane juice applicable to sugar industry

13.05 – 14.10  Lunch break

14.10 – 15.20

SESSION IX

Petr Solich, Marek Trojanowicz

14.10 KL7 Peter C. Hauser, Jasmine S. Furter, Marc-Aurèle Boillat

Purpose made capillary electrophoresis instrumentation

14.35 OP11 Michał Woźniakiewicz, Małgorzata Gołąb, Paweł M. Nowak, Paweł Kościelniak

An automated hydrodynamically mediated technique for preparation of calibration solutions via capillary electrophoresis system

14.50 OP12 Paweł M. Nowak, Maria Klag, Gabriela Kózka, Michał Woźniakiewicz

Development of a method for determining the acid dissociation constant by combining the capillary electrophoresis with microscale thermophoresis in the on line flow format (CE-MST)

15.05 OP13 Justyna Dobrowolska-Iwanek, Paweł Paško, Sviatoslav Grekh, Małgorzata Jamka-Kasprzyk, Anna Jurczak

Development of organic acids determination in saliva using isotachopheresis technique (ITP)

19.00 – 22.00

Conference banquet

Pałac pod Baranami, Rynek Główny 27, Kraków
(Palace under the Rams, The Main Square 27, Krakow)

Friday, July 1, 2022

09.00 – 11.00

SESSION X

Victor Cerda, Antonio Rangel

- | | | |
|-------|------|---|
| 09.00 | PL9 | <u>Paweł Kościelniak</u>
<i>White calibration methods in flow analysis</i> |
| 09.35 | KL8 | Kanokwan Kiwfo, Pei Meng Woi, Chalermpong Saenjum, Siripat Suteerapataranon, Gary D. Christian, Ian D. McKelvie, Spas D. Kolev, <u>Kate Grudpan</u>
<i>Natural reagents for chemical analysis: consideration with United Nations Sustainable Development Goals</i> |
| 10.00 | OP14 | <u>Sumonmarn Chaneam</u> , Tananun Phongsutthisombat, Sirinya Panatta, Nicharee Yensuksiri, Peeraphon Thienwong, Apisake Hongwitayakorn, Duangjai Nacapricha
<i>Development of sequential injection analysis with cost-effective optical device based on LED colorimeter for simultaneous analysis of zinc and copper in dietary supplements</i> |
| 10.15 | OP15 | <u>Sławomir Kalinowski</u> , Bartosz Libeck
<i>Automatic flow system for determination of chemical oxygen demand (COD) with a two-beam photometric detector</i> |
| 10.30 | OP16 | <u>Ryoichi Ishimatsu</u>
<i>Spectroelectrochemical determination of the rate constant of protonation reactions for some radical anions</i> |

10.45	OP17	<u>Paweł Świt</u> , Joanna Orzeł, Sławomir Maślanka <i>Determination of EPA PAHs in simulated natural and artificial fires by HPLC-DAD-FLD with the application of the Multi-Component Integrated Calibration Method</i>
11.00	OP18	Chris Davies, <u>Agatha Grela</u> , Joanne Morrissey, Havovi Chichger, Lata Gautam <i>Quantification of diclazepam and its metabolites using GC-MS for chemometric purposes</i>
11.15 – 11.35		 Coffee break
11.35 – 12.30		CLOSING SESSION Joanna Kozak, Marcin Wieczorek
11.35	CL	<u>Purnendu Dasgupta</u> <i>Open tubular ion chromatography. The trials and tribulations to approach small</i>
12.10		Closing remarks
12.30 – 13.30		 Lunch