MSB 2024

40th International Symposium on Microscale Separations and Bioanalysis

May 19–22, 2024, Brno, Czech Republic

Program and Abstract Book

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Final Program and Abstract Book

www.msb2024.org

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We wish to thank our sponsors for their generous support.

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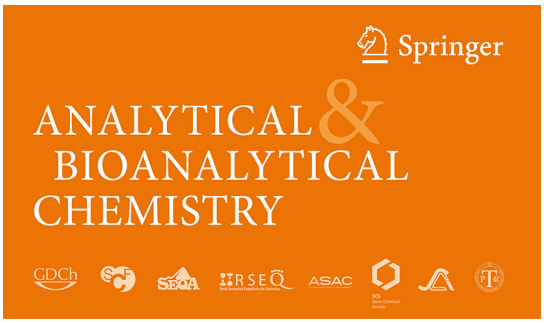
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EXHIBITORS

WELCOME FROM THE MSB 2024 CHAIR

On behalf of the organizing committee of the 40th International Symposium on Microscale Separations and Bioanalysis – MSB 2024, it is my great pleasure to welcome you to Brno, Czech Republic.

MSB began as the HPCE symposium in 1989, focused tightly on the emerging technology – High Performance Capillary Electrophoresis – that ultimately sequenced the human genome and enabled a revolution in molecular biology. The conference has evolved into an annual interactive forum for the discussion of research on the frontiers of microscale separation science and bioanalysis. That was accompanied by a format change that has made this meeting more dynamic and inclusive, having a double-blind abstract review process that ensures the best science is presented. In keeping with this theme, MSB 2024 encompasses a range of microscale separations research, from fundamental technology development to high-impact applications in the fields of health, medicine, and the environment. The meeting begins with a series of short courses, which lead to an opening plenary session. In the following days, the scientific program will be held in two parallel sessions. We include oral presentations from young scientists and poster sessions to ensure that no research topic is left wanting for conversation.

In addition to our invited plenary and keynote presenters, we welcome our 44 oral presentations selected via the double-blind review process. Our goal is to set the stage for the future of microscale science. 1/3 of the allocated presentation time is reserved for questions, leaving ample opportunity for discussion of each presentation before advancing to the next talk.

At the start of the symposium, I would like to thank you for your contribution and participation and acknowledge our sponsors for their generous support. Without delegates and sponsors, there would be no symposium. I warmly invite all of you to join me in creating a stimulating microclimate for a special and rewarding MSB 2024 event.

Frantisek Foret
MSB 2024 chair
Institute of Analytical Chemistry
of the Czech Academy of Sciences

www.msb2024.org

COMMITTEES

MSB 2024 chair

Frantisek FORET, Institute of Analytical Chemistry of the CAS, Brno, Czech Republic

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MSB 2024 IN HONOR OF BARRY KARGER

Barry L. Karger, PhD, is the Director Emeritus of the Barnett Institute for Chemical and Biological Analysis, and James L. Waters Emeritus Chair and Distinguished Professor Emeritus at Northeastern University. Throughout his career, Dr. Karger has made major advances in understanding the fundamentals of chromatography and capillary electrophoresis techniques and to their application, particularly in the fields of protein and DNA analysis.

Dr. Karger founded the Barnett Institute of Chemical and Biological Analysis in 1973, which has been a significant contributor to developing analytical methods for the biological sciences and the instrumentation and biotechnology industries. The Barnett Institute has produced over 500 PhDs, postdocs, and staff, many of whom have gone on to have distinguished careers in academia and industry.

Dr. Karger began his research career in gas chromatography. He was at the forefront of high-performance liquid chromatography and was among the first to develop reversed-phase liquid chromatography (RPLC). He introduced a means of classifying mobile phases in RPLC, leading to a better understanding of selectivity, and he was the first to show direct enantiomeric separations using liquid chromatography using chiral chelate additives. In 1973, Karger co-authored the textbook, An Introduction to Separation Science, which was used to train over two generations of analytical chemists in chromatographic fundamentals.

Dr. Karger played a significant role in the Human Genome Project using capillary electrophoresis. He was the first to show that polymer separation media could be blown out of the capillary column and reloaded with fresh polymer with no change in the separation performance of DNA fragments, allowing automated DNA sequencing. His linear polyacrylamide polymer matrix was used to sequence 40% of the first human genome sequence.

Dr. Karger is also known for his research on the analysis of peptides and proteins, especially the native-denatured behavior of proteins in RPLC. Focusing his work on the coupling of mass spectrometry with liquid chromatography and capillary electrophoresis facilitated the analysis of low-volume clinical samples. It led to the identification of important cancer and blood biomarkers. His research also expanded to include detailed characterization of protein biopharmaceuticals — applying powerful analytical techniques routinely used today in the biopharmaceutical field.

Dr. Karger won the Steven dal Nogare Memorial Award for Chromatography (1975), the American Chemical Society (ACS) Award in Chromatography (1982), the M.S. Tswett Medal in Chromatography (1986), the ACS Award in Analytical Chemistry (1990), the A.J.P. Martin Medal (1991), the EAS Symposium Award for Outstanding Achievements in the Field of Separations

Science (1997), the ACS Award in Separations Science and Technology (1998), and the Halász Medal of the Hungarian Chemical Society for Chromatography and Separation Science (2002). He has also received the CaSSS Award (2003), the Michael Widmer Award (2004, Switzerland), the Torbern Bergman Medal (2008, Sweden), the Csaba Horváth Medal (2008), the Golay Medal, (2009), the Csaba Horváth Lectureship (2010, Hungary), the J. Heyrovsky Honorary Medal (2010, Czech Republic), the Arnold O. Beckman Medal (2014), and the Lifetime Achievement in Chromatography Award by LCGC (2022).

SYMPOSIUM HISTORY

Originally established as the International Symposium on High-Performance Capillary Electrophoresis (HPCE), the first event was held April 10-12, 1989, at the Park Plaza Hotel in Boston, MA. Professor Barry Karger from Northeastern University founded the meeting which featured presentations discussing the principles of separations in capillaries under high electric fields, including instrumentation development and applications, particularly in biotechnology.

The HPCE symposium was introduced when capillary electrophoresis (CE) branched off from the HPLC community, giving the technology the necessary focus at a time when CE instrumentation was first being commercialized. The Scientific Advisory Board (SAB) drove the symposium series under its diligent chairman Barry Karger until 2000, followed by Frantisek Svec. The series was organized worldwide by Prof. Karger until 2000, after which by CASSS in the USA and by separate bodies in Europe and Asia.

At HPCE 2004 in Salzburg, the SAB changed the symposium name to MicroScale Bioseparations (MSB), since the attendees' interests expanded into the related techniques of micro- and nano-HPLC, microfluidic separations, and Lab-on-a-Chip applications, while the fascination with CE slowly decreased. The stylized logo was created at the same time and captured the acronym MSB in a DNA helix motif given the prominent role that electrically-driven microseparations have played in DNA sequencing and the early completion of the Human Genome Project.

At MSB 2012 in Geneva, Switzerland, Beckman-Coulter established the prestigious Arnold O. Beckman Medal and Award for Outstanding Scientific Achievements in The Field of Electrodriven Separations Techniques which has become an essential element of the MSB series.

After the MSB 2012 symposium, the SAB changed. This was not done just by including new members but also by introducing new key concepts by which future meetings of the series will be organized. The symposium aims to create a confidential ambiance with significant room for discussion and with over seventy percent of the program built from contributed abstracts using a blind review process. The board also changed its name to Strategic Program Committee (SPC). To further broaden the scope of the series to a wider range of scientists, the SPC approved the

acronym MSB to refer to Microscale Separations and Bioanalysis. The new official conference name was used for the first time at MSB 2016 in Niagara-on-the-Lake, Canada.

In January 2018, the SPC took the bold step of creating an official, incorporated society to ensure the longevity of the MSB symposium series. Previous members of the SPC now form the Board of Directors of the Society for Microscale Separations and Bioanalysis (SMSB).

PREVIOUS HPCE AND MSB MEETINGS

Year	*Location*	*Chair(s)*
1989	Boston	Barry Karger
1990	San Francisco	Barry Karger
1991	San Diego	James Jorgenson
1992	Amsterdam	Frans Everaerts
1993	Orlando	Barry Karger
1994	San Diego	Shigeru Terabe
1995	Würzburg	Heinz Engelhardt
1996	Orlando	Barry Karger
1997	Anaheim	William Hancock
1997	Kyoto	Shigeru Terabe
1998	Orlando	Barry Karger, Salvatore Fanali
1999	Palm Springs	Edward Yeung
2000	Saarbrücken	Heinz Engelhardt
2001	Boston	Barry Karger, William Hancock
2002	Stockholm	Douglas Westerlund
2003	San Diego	Aran Paulus, Andras Guttman
2004	Salzburg	Wolfgang Lindner
2005	New Orleans	Michael Ramsey
2005	Kobe	Yoshinobu Baba, Koji Otsuka
2006	Amsterdam	Gerard Rozing
2007	Vancouver	Robert Kennedy
2008	Berlin	Andreas Manz
2009	Boston	Jonathan Sweedler
2009	Dalian	Hanfa Zou
2010	Prague	Frantisek Foret
2011	San Diego	Annelise Barron
2012	Geneva	Franka Kalman, Gerard Rozing, Jean-Luc Veuthey
2012	Shanghai	Rong Zeng
2013	Charlottesville	Jeff Chapman, James Landers

2014	Pécs	Ferenc Kilár, Attila Felinger, András Guttman
2015	Shanghai	Fukui Zhang, Pengyuan Yang, Norman Dovichi, Amy Guo
2016	Niagara-on-the-Lake	Philip Britz-McKibbin, Karen Waldron, Sergey Krylov
2017	Noordwijkerhout	Govert Somsen, Rawi Ramautar
2018	Rio de Janeiro	Marina Tavares, Emanuel Carrilho
2019	Corvallis	Vincent Remcho, Karen Waldron
2020	Saint-Malo (Virtual)	Myriam Taverna, Serge Rudaz
2021	Boston (Virtual)	Alexander Ivanov, Kimberly Hamad-Schifferli, Jarrod Marto
2022	Liège	Marianne Fillet, Heidi Ottevaere
2023	Tallahassee	Michael Roper, Rebecca Pompano, James Edwards
2024	Brno	Frantisek Foret

SCIEX MICROSCALE SEPARATIONS INNOVATIONS MEDAL AND AWARD

The SCIEX Microscale Separations Innovations Medal and Award (previously the Arnold O. Beckman Award) is an annual award given to an individual for remarkable career achievements, with particular consideration being given to the development of new methods, techniques and high-impact applications in the field of electro driven separations. The award is supported by SCIEX, a key driver in capillary electrophoresis technology, and comprises a medal, a diploma, and a monetary prize. The award is focused on a capstone achievement in the preceding 12 months but also recognizes that this key achievement is often built on a foundation of prior efforts.

The 2024 SCIEX Microscale Separations Innovations Medal and Award will be presented to:

Hervé Cottet

Prof. Hervé Cottet is a full professor at the Biomolecule Institute (IBMM) in Montpellier, France. His research work concentrates on the interface between separation sciences, analytical chemistry, polymers, and pharmaceutical sciences, with expertise in Capillary Electrophoresis and Taylor Dispersion Analysis. He is both interested in the fundamentals and practical (or industrial) applications of CE and TDA. Recent advances include the development of polyelectrolyte multilayer capillary coatings, the limitation of solute adsorption, the optimization of separation efficiency in CE, the study of biomolecular interactions, the monitoring of biomolecule aggregation, the characterization of vaccine formulations, and the development of various TDA applications. He has co-authored more than 150 scientific articles (h-index=40) dealing with CE and/or TDA. He has (co-)supervised more than 20 PhD students.

Previous Award Winners

2023	Christian Neusüß
2022	James Landers
2021	Peter Willis
2020	Detlev Belder
2019	Aaron Wheeler
2018	Amy Herr
2017	Shigeru Terabe
2016	Bohuslav Gaš
2015	Gyula Vigh
2014	Barry Karger
2013	Stellan Hjertén
2012	Pier Giorgio Righetti

MEDAL OF JAROSLAV JANÁK

The Medal of Jaroslav Janák for contributions to the development of analytical sciences was established by the Institute of Analytical Chemistry of the Czech Academy of Sciences. Named after the inventor of the gas chromatograph (patented in 1952), the founder of the institute (1956), and its long-term director, the medal is awarded to scientists who have significantly contributed to the development of separation sciences.

In 2024, the Medal of Jaroslav Janák goes to:

Milos V. Novotny

Milos V. Novotny, a native of Brno (Czech Republic), is a Distinguished Professor Emeritus and Adjunct Professor of Medicine at Indiana University. He has resided with his family in Bloomington (Indiana) for more than 50 years.

Milos Novotny was raised and educated in Brno, studying at Masaryk University, where he received the degrees of Magister and RNDr (Biochemistry) and Dr.Sc. (Chemical Sciences). Before emigrating to Sweden in January 1968, and later to the U.S.A., he was for 3 years on the research staff of the Institute of Analytical Chemistry of the Czechoslovak Academy of Sciences in Brno. While working at the Royal Karolinska Institute in Stockholm, he accepted the Robert A. Welch Postdoctoral Fellowship at the University of Houston (Texas) during 1969-1971. In August 1971, he was appointed to the faculty of Indiana University (IU) where he rose through the ranks to a full professor, James H. Rudy Professor, Lilly Chemistry Alumni Chair, and Distinguished Professor.

At IU Milos Novotny established a strong and internationally recognized research group playing a major role in developing modern chromatographic and electrophoretic analytical techniques. He was a pioneer in the preparation of glass capillary GC columns and coupling of capillary GC with mass spectrometry; later on, in capillary LC, capillary SFC, and in the early developments in capillary electrophoresis. As a member of the NASA Viking 1975 Science Team, Novotny designed the miniaturized GC column to search for organic molecules on the Planet Mars. In the search for new LC microcolumns, miniaturized detectors, and capillary LC-MS methodologies, Milos Novotny educated numerous students and research associates to become future leaders in academia and top industrial positions. He received several teaching awards at IU.

For his research accomplishments, Dr. Novotny has been recognized by more than 40 different awards, medals, and other distinctions on three different continents. Among the most prestigious

are 4 awards from the American Chemical Society: Chromatography (1986); Chemical Instrumentation (1988); Separation Science and Technology (1992); and Analytical Chemistry (2005); also Ralph N. Adams Award in Bioanalytical Chemistry (2008). He was named the R&D Magazine Scientist of the Year in 1994. His international awards include Marcel J.E. Golay Award and the A.J.P. Martin Gold Medal (U.K.). Milos Novotny received honorary doctorates from Uppsala University (Sweden) and Charles University in Prague. He was elected to two foreign academies: the Royal Society for Sciences (Sweden) and the Learned Society of the Czech Republic. His research interests remain wide-ranging, from separation science to structural analysis of biological molecules, proteomics, glycoscience to chemical communication in mammals. He and his coworkers have been credited with structural identification of the first mammalian pheromones. He has co-authored over 540 articles, reviews, and patents, which are widely cited (h-index 102).

While maintaining extensive international scientific collaborations, Dr. Novotny has particularly intensified contacts in his homeland after the Velvet Revolution in 1989. He has collaborated with scientists at Charles University, Masaryk University, the University of Pardubice, and the University of South Bohemia. The Czech Academy of Sciences honored him with the J. E. Purkyne Medal and the Jaroslav Heyrovsky Medal for advancing chemical sciences. After retiring from Indiana University in 2011, Dr. Novotny held a part-time research position at the Masaryk Memorial Cancer Institute in Brno.

András Guttman

Professor András Guttman is heading the Horváth Csaba Memorial Laboratory of Bioseparation Sciences at the University of Debrecen (Hungary) and the Translational Glycomics Research Group at the University of Pannonia (Veszprem, Hungary). Professor Guttman graduated from the University of Veszprem (Hungary) in chemical engineering, where he also received his first doctoral degree. His work is focused on capillary electrophoresis, CE-MS-based glycomics, and glycoproteomics analysis of molecules of biomedical and biopharmaceutical interests.

Professor Guttman had previous academic appointments at Northeastern University (Boston, MA) and the University of Innsbruck (Austria) holding the Marie Curie Chair of the European Commission. His former industrial affiliations included Novartis (La Jolla, CA), Genetic BioSystems (San Diego, CA), and Beckman Instruments (Brea, CA), where he developed high-resolution capillary electrophoresis and microfluidics-based bioanalytical methods.

Professor Guttman has published nearly 400 scientific papers, and 38 book chapters, authored one and edited four textbooks, and holds more than 40 patents. He is a member of the Hungarian Academy of Sciences and was the past president of the American Chemical Society Hungary

Chapter. Professor Guttman is the Editor in Chief for Current Molecular Medicine and serves on the editorial boards of a dozen international scientific journals. He is on the Board of the Society of Hungarian Academicians in America and is the associate director of CASSS.

Professor Guttman is in the top 0.5% of scientists in the world and has been recognized by numerous awards, including the Analytical Chemistry Award of the Hungarian Chemical Society in 2000, the CASSS CE Pharm Award, the Arany Janos Medal of the Hungarian Academy of Sciences, and the Pro Scientia award of University of Pannonia in 2013. In 2014 he received the Dennis Gabor Award of the Novofer Foundation. In 2017 Professor Guttman received the Dal Nogare Award of the Delaware Valley Chromatography Forum and the Grand Prize of the Swedish Chamber of Commerce. He was a Fulbright Scholar of the US Department of State in 2012 and named a distinguished Brain Pool Fellow of the National Research Foundation of Korea in 2021. Professor Guttman also received the 2024 Jedlik Anyos Award of the Hungarian Intellectual Property Office and the Cross of Merit of the Hungarian Republic.

Previous Medal Winners

2023	Bohuslav Gaš
2022	Martin Gilar
2022	František Švec
2018	Ludmila Křivánková
2016	Petr Boček
2015	Pavel Jandera
2014	Jaroslav Janák

MSB 2024 YOUNG SCIENTISTS AWARD

The MSB 2024 Young Scientists Award is intended to give talented young scientists extra encouragement. It will be presented to a young researcher whose outstanding work sets an example for other scientists. All presenters who are graduate students or postdocs at the end date of the meeting are eligible for consideration (proof of status will be required). An international jury of scientists will judge the qualified presentations and choose the winners. The prize consists of a certificate, a cash amount (sponsored by Wiley – Electrophoresis and MDPI - Micromachines), and a book voucher (sponsored by Springer - Analytical and Bioanalytical Chemistry). The winners will be announced and awarded at the Closing Ceremony on Wednesday.

MSB 2024 Young Scientists Award Nomination:

Antonín Bednařík, Brno, Czech Republic
Constantin Blöchl, Leiden, The Netherlands
Zahia Bouchelaghem, Orléans, France
Christoph Gstöttner, Leiden, The Netherlands
Mathilde Jégo, Orsay, France
Ignaas S.M. Jimidar, Brussels, Belgium
Hany A. Majeed, Amsterdam, The Netherlands
Jasmin Schairer, Aalen, Germany
Egzontina Shabani, Pardubice, Czech Republic
Denisa Smolková, Brno, Czech Republic
Ruben Szabó, Debrecen, Hungary
Dora Szerenyi, Veszprem, Hungary
Rebeka Török, Veszprem, Hungary
François-Xavier Vidal, Lyon, France
Tobias Waldmann, Aalen, Germany
Delaram Zohouri, Orsay, France

MSB 2024 BEST POSTER AWARD

All posters presented at MSB 2024 will be considered for an MSB 2024 Best Poster Award. An international panel of scientists will review the posters. Posters will be up during the entire symposium. Presenters of a poster with an even number should be at their poster during the poster session on Monday; presenters of posters with an odd number should be at their poster during the poster session on Tuesday. The poster prize consists of a certificate, and a cash amount (sponsored by the Royal Society of Chemistry – Analyst and Analytical Methods). Poster prize winners will be presented and awarded at the Closing Ceremony on Wednesday.

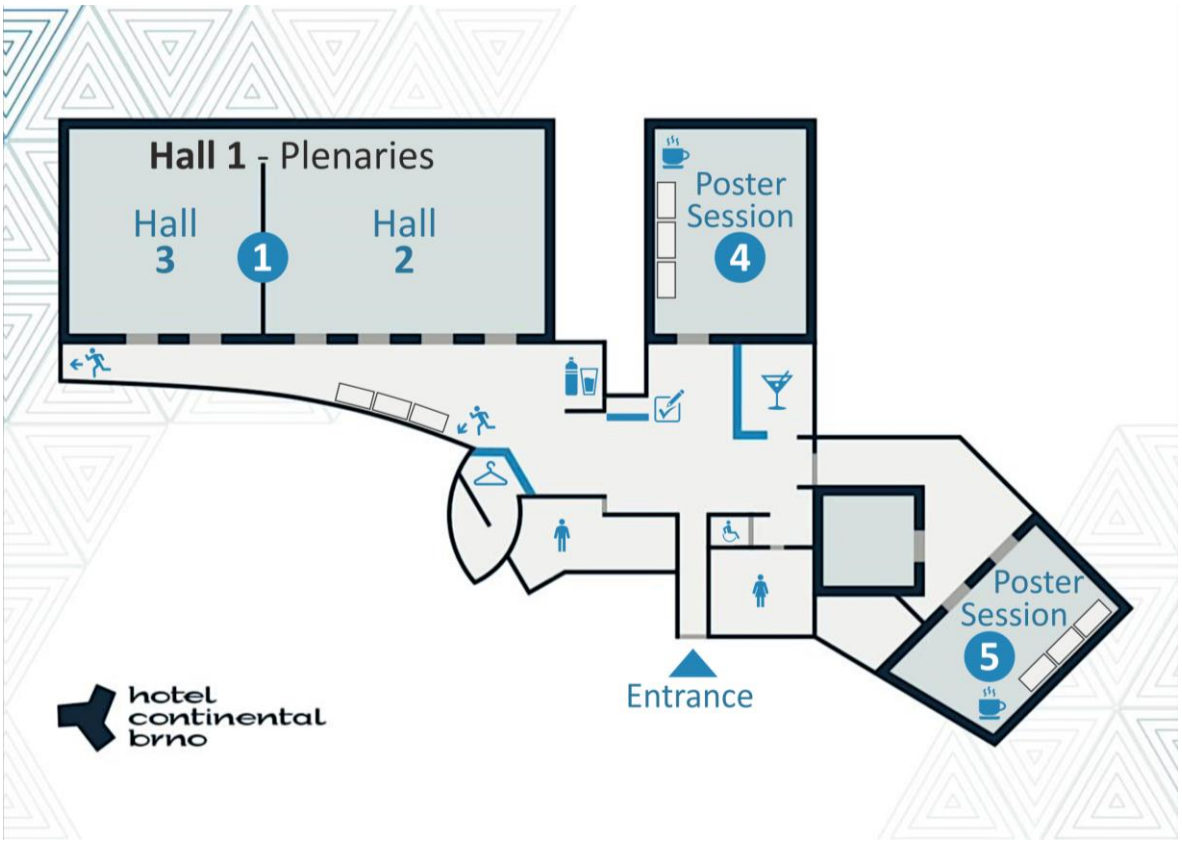
CONFERENCE VENUE

Congress Center of the Hotel Continental****
Kounicova 6, Brno, Czech Republic
www.continentalbrno.cz/en

All symposium meeting rooms are located on the first floor.

- The opening and closing ceremonies and plenary lectures will be in room 1.
- The oral parallel sessions are in rooms 2 and 3.
- Poster sessions, exhibitor table tops, and coffee breaks are in rooms 4 and 5.
- The symposium registration desk is located in the lobby.

Lunches will be served in the Hotel Restaurant on the ground floor.



GENERAL INFORMATION

Badge

Each registered participant must wear the official symposium name badge to gain admittance to the meeting, symposium rooms, and social gatherings. Badge sharing is not permitted.

Registration and Information Desk

The symposium registration desk is located in the lobby of the Congress Center.

Opening hours:
Sunday 12:00 – 20:00
Monday 8:30 – 17:00
Tuesday 8:30 – 16:00
Wednesday 8:30 – 16:00

Exhibitors

Visit the exhibitors' table tops in the lobby and rooms 4 and 5. Take the time to thank them for their generous support of the symposium by letting them share their latest services and products with you.

SOCIAL PROGRAM

MSB recognizes that good science is all about strong interaction between people. Therefore, next to a comprehensive scientific program with active discussion, MSB 2024 will provide ample opportunities to build up and strengthen social networks. All social events are included in the registration and are open to each delegate. So, join us and take the occasion to meet up with old friends and make new friendships.

Welcome Reception

Sunday, May 19, 2024, 18:20-20:00 - Congress Center of the Hotel Continental, Kounicova 6, Brno

Refreshments and wine just after the Opening Plenary Session.

Tour of the Mendel Museum: "Discover the story of the founder of genetics – Gregor Johann Mendel"

Tuesday, May 21, 2024, 16:00-18:45 - Mendel Museum, Mendlovo náměstí 1a, Brno

The exhibition displays original objects belonging to the "Father of Genetics", his school reports, books, or teaching aids. The crowning piece of the display is Mendel's seminal work, Versuche über Pflanzenhybriden (Experiments with Plant Hybrids).

Banquet

Tuesday, May 21, 2024, 19:00-21:00 - Augustinian Abbey, Mendlovo náměstí 1, Brno

Our banquet dinner in the Garden of Eden of the Monastery courtyard with the tour of the Mendel Museum allows you to see the places where the era of Modern Genetics started.

Farewell Reception – sponsored by VICI AG International

Wednesday, May 22, 2024, 16:00-17:00 - Congress Center of the Hotel Continental, Kounicova 6, Brno

A last drink before returning home.

All symposium participants and accompanying persons are kindly welcome to all social events.

SHORT COURSES

MSB 2024 offers three stimulating and highly informative short courses for symposium participants. The short courses are lectured by recognized experts in the field and run in parallel on Sunday, May 19, 2024, from 13:00 to 16:00. The course fee is 50 euros.

1. Ion Mobility Spectrometry

presented by Tim Causon, BOKU - University of Natural Resources and Life Sciences, Vienna, Austria

Course Description:
Ion mobility (IM) complements existing analytical methods as it involves millisecond-timescale separations of gas phase ions according to their structure and not only their mass. Combined with mass spectrometry, IM-MS is now a powerful technology that can be used in diverse analytical applications. This short course will introduce the basics of IM theory, separation principles, and the derivation of collision cross section (CCS) from IM-MS measurements. Important instrumental aspects of IM spectrometry and IM-MS technologies will be introduced, and examples from diverse application fields (e.g., food, metabolomics, environmental analysis) will be shown to highlight how ion mobility can be applied successfully in analytical methods.

Instructor:
Assoc. Prof. Tim Causon is an Associate Professor at the Institute of Analytical Chemistry, University of Natural Resources and Life Sciences, Vienna (Austria). His main areas of research are liquid chromatography, molecular mass spectrometry, and ion mobility-mass spectrometry (IM-MS) addressing diverse analytical method development questions and fundamental studies of ionization and properties of small molecular ions. Current research topics include applications of these analytical techniques for optimization of both upstream (e.g., microbial cell factories) and downstream (e.g., purification) ends of the bioprocessing continuum, fundamental investigations of gas-phase isomers of small molecule systems, and addressing the urgent need for harmonization of IM-MS measurement and reporting standards. Starting in 2024, he will be the coordinator of the MSCA Doctoral Network "MobiliTraIN" (Ion Mobility Mass Spectrometry Training Network).

2. Mass Spectrometry Imaging

presented by Jan Preisler - Antonin Bednarik, Masaryk University, Brno, Czech Republic

Course Description:
This course comprehensively explains mass spectrometry imaging (MSI) principles and techniques. The most common ionization techniques involved in MSI, namely matrix-assisted laser desorption/ionization (MALDI), desorption electrospray (DESI), secondary ion mass spectrometry (SIMS) and laser ablation inductively-coupled plasma (LA ICP), are reviewed. The MALDI technique

is emphasized, as it presents the most widespread MSI platform. Sample preparation methods are discussed in detail, including tissue sectioning and storage, washing protocols, matrix application, and on-tissue reactions. Current instrumentation, a common data format (imzML) structure, software tools for data processing and visualization, selected applications, and the latest achievements in MSI are presented.

Instructors:
Prof. Jan Preisler is a professor of analytical chemistry at Masaryk University in Brno, Czech Republic. He received his Ph.D. with Ed Yeung at Iowa State University, Ames, and spent four years in the group of Barry Karger at Barnett Institute, Boston. His research interests include the development of instrumentation and methods for bioanalytical chemistry, MS imaging, time-of-flight mass spectrometers, characterization and analytical applications of nanoparticles, single-particle analysis, and development of new sample introduction techniques for inductively coupled plasma mass spectrometry. He pioneered using kHz lasers to increase the throughput of matrix-assisted laser desorption/ionization time-of-flight mass spectrometry in imaging applications and to detect parallel column separations.

Antonin Bednarik, Ph.D. is a postdoc researcher at Masaryk University in Brno, Czech Republic. His research activities include the development of MALDI MS and MSI instrumentation, analysis of volatile organic compounds, the development of novel MSI techniques, and applications of MSI in the analysis of nanoparticles and lipidomics. After receiving his Ph.D., he spent one year as a postdoc in the group of Klaus Dreisewerd in Münster, where he developed on-tissue Paternò Büchi derivatization protocol for MALDI MSI of lipid double bond positional isomers. He continues studying on-tissue derivatization reactions for MSI of lipid isomers and their potential in clinical applications.

3. Introduction to Miniaturization and Microfluidics

presented by Petr Kuban - Jakub Novotny - Tomas Vaclavek - Jana Krivankova, Institute of Analytical Chemistry of the Czech Academy of Sciences, Brno, Czech Republic

Course Description:
The main objective of this short course is to provide the participants with an overview of the basic concepts of miniaturization and microfluidic technology. We will discuss the fundamentals of microfabrication techniques involved in manufacturing microfluidic devices as well as the main benefits of utilizing such devices in analytical chemistry. In a series of lectures, the participants will gain knowledge and skills on two primary techniques for fabricating microfluidic devices in glass and polymeric materials. The methods will include glass chip fabrication techniques, such as photolithography, metal deposition, and etching. The information regarding the fabrication of plastic- and polymer-based systems, such as PDMS chips, will encompass casting and other soft lithography techniques. Eventually, there will be a comprehensive lecture on 3D printing, showing 3D printing techniques, such as FDM and SLA, discussing the advantages of various printing materials, economic and sustainability aspects, etc., and practical examples of a 3D printed casing for microfluidic devices. The participants will also gain knowledge of other computer-controlled

methods associated with fabricating microfluidic devices, such as CNC micromachining. Last but not least the control of microfluidic devices with the use of an Arduino microcontroller, basic programming using the IDE, and examples of the use of Arduino in analytical instruments will be shown. Additionally, specific applications like single-cell analysis and droplet microfluidics, and more will be discussed as a part of this course.

Instructors:
Assoc. Prof. Petr Kuban obtained his doctorate from the Department of Analytical Chemistry, Stockholm University, Sweden and spent three years as a post-doc at the Department of Chemistry and Biochemistry, Texas Tech University, USA. He is the Head of the Department of Bioanalytical Instrumentation at the Institute of Analytical Chemistry of the Czech Academy of Sciences in Brno, Czech Republic. His main research interests include micro-column separation techniques such as capillary electrophoresis and HPLC, flow injection analysis, sample pretreatment and preconcentration, miniaturization, microfluidics, and developing novel analytical instrumentation for clinical diagnostics.

Jakub Novotny, Ph.D. aimed his doctoral studies at the Institute of Analytical Chemistry in Brno, Czech Republic, towards the applications of microfluidics in biochemistry, with a specific emphasis on microfabrication methods. This involved the development of microfluidic devices using CNC fabrication methods (e.g. micro-milling), 3D printing, and photolithography. During his postdoctoral research in Lund, Sweden, he explored the techniques related to acoustofluidics (study of the interaction of soundwaves with fluids and dispersed particles at the microscale). His current work continues to revolve around acoustofluidics and the development of acousto/microfluidic devices.

Tomas Vaclavek, Ph.D. has received his Ph.D. in Biochemistry from Masaryk University, developing various microfluidic systems focused on single-cell manipulation, non-optical particle detection, and intracellular compound isolation with subsequent analysis by mass spectrometry. His collaborations provided valuable experience with the miniaturization of biosensing systems or developing microfluidic interfaces for 2D liquid separations. Currently, he develops micromachined nanospray interfaces as ion sources for highly sensitive bioanalyses.

Jana Krivankova, Ph.D. finished her doctoral studies at the Brno University of Technology. Since 2016, she explored research related to fabrication techniques, focused on developing and optimizing droplet-based microfluidic devices. Her current research deals with the application of photon-conversion nanoparticles and automation on microfluidic chips to detect clinically relevant protein markers.

SCIENTIFIC PROGRAM

MSB 2024 Young Scientists Award Nomination

May 19, 2024 (Sunday)

12:00	Registration desk opens	
13:00–16:00	SHORT COURSES, registration required – Rooms 2, 3, 4	
	SC1 – Ion Mobility Spectrometry	
	SC2 – Mass Spectrometry Imaging	
	SC3 – Introduction to Miniaturization and Microfluidics	
16:30–16:40	Opening Ceremony – Room 1 *Chair: Frantisek Foret, Institute of Analytical Chemistry of the CAS, Brno, Czech Republic*	
16:40–17:00	Interview of Barry Karger with the MSB 2024 chair	
	Plenary Lectures 1 – Room 1 *Chair: Frantisek Foret, Institute of Analytical Chemistry of the CAS, Brno, Czech Republic*	
17:00–17:40	PL1	Microdroplet Arrays: The Next Generation of Multi-Well Plates for High Throughput Analysis Petra Dittrich, ETH Zurich, Basel, Switzerland
17:40–18:20	PL2	Applications of DNA Capillary Electrophoresis in Molecular Cancer Diagnostics: Above and Beyond Sanger Sequencing Marek Minarik, Elphogene & Charles University, Prague, Czech Republic
18:20–20:00	Welcome Reception	

May 20, 2024 (Monday)

	Session 1 - Microfluidics I - Room 2 *Chair: Jan Petr, Palacký University Olomouc, Olomouc, Czech Republic*	
09:00-09:30	KN1	Novel Electrokinetic Approaches for Particle Separation Applied to Organelles and Microplastics Alexandra Ros, Arizona State University, Tempe, AZ, USA
09:30-09:50	O1	On-Chip Depletion-Zone Isotachophoresis of Exosomes: A Solution to Overcome the Purity Limitations of Current Techniques Andrea Capuano, EXIT071, Leiden, The Netherlands
09:50-10:10	O2	Frontal Analysis Continuous Capillary Electrophoresis: An Approach to Predict Plasma Proteins and Polymeric Nanoparticles Interactions Mathilde Jégo, University Paris Saclay, Orsay, France
10:10-10:30	O3	Chip Electrophoresis of Fluorescently Labelled Virus Particles Victor U. Weiss, TU Wien, Vienna, Austria
	Session 2 - Glycomics - Room 3 *Chair: Gabor Jarvas, University of Pannonia, Veszprem, Hungary*	
09:00-09:30	KN2	Comprehensive Characterization of Mammalian Brain N-Glycome: Isomer-Sensitive Nano-LC-MS/MS Analysis and its Application to Alzheimer's Disease Models Hyun Joo An, Chungnam National University, Daejeon, Korea
09:30-09:50	O4	SSSMuG: Same Sample Sequential Multi-Glycomics Edward S.X. Moh, Macquarie University, Sydney, Australia
09:50-10:10	O5	Comprehensive O-Glycan Analysis by Porous Graphitized Carbon Nano-Liquid Chromatography-Mass Spectrometry Tao Zhang, Leiden University Medical Center, Leiden, The Netherlands
10:10-10:30	O6	BODIPY-based Fluorescent Labeling Tag for Oligosaccharide and N-Linked Glycan Analysis by High-Performance Liquid Chromatography with Fluorescence Detection Denisa Smolková, Institute of Analytical Chemistry of the CAS, Brno, Czech Republic
10:30-11:00	Coffee Break	

	Session 3 - Advances in Microscale CE and LC Separations I - Room 2 *Chair: Rawi Ramautar, Leiden University, Leiden, The Netherlands*	
11:00-11:30	KN3	Multidimensional Assessment of Polymer Nanoparticles Govert W. Somsen, Vrije Universiteit Amsterdam, Amsterdam, The Netherlands
11:30-11:50	O7	Highly Sensitive Two-dimensional Profiling of N-linked Glycans by Hydrophilic Interaction Liquid Chromatography and Dual Stacking Capillary Gel Electrophoresis Takayuki Kawai, Kyushu University, Fukuoka, Japan
11:50-12:10	O8	Going Big: Non-Denaturing HRMS- Hyphenated Separations Unleash the Analysis of Complex Proteoform Mixtures Over 100 kDa Andrea Gargano, University of Amsterdam, Amsterdam, The Netherlands
12:10-12:30	O9	Endotoxin Quantification by the Chemical Instrumental HPLC-Kdo-DMB Assay Anika Hoffmann, HES-SO Valais-Wallis, Sion, Switzerland
12:30-12:50	O10	A Novel Selective Comprehensive Two-Dimensional Online nanoLC-CZE-MS Platform for Proteoform Characterization Tobias Waldmann, Aalen University, Aalen, Germany
	Session 4 - New Trends in MS and IMS - Room 3 *Chair: Tim Causon, BOKU, Vienna, Austria*	
11:00-11:30	KN4	Imaging of Individual Nanoparticles by Mass Spectrometry Jan Preisler, Masaryk University, Brno, Czech Republic
11:30-11:50	O11	Taylor-Aris Dispersion Assisted Mass Spectrometry for the Direct Injection Analysis of Proteins with High Matrix Content Ruben Szabó, University of Debrecen, Debrecen, Hungary
11:50-12:10	O12	Rapid Distinction and Assignment of Positional Isomers of New Psychoactive Drugs in Mixtures by Trapped Ion Mobility Mass Spectrometry Hany A. Majeed, Vrije Universiteit Amsterdam, Amsterdam, The Netherlands
12:10-12:30	O13	Metal Ionization in Gas Phase Mass Spectrometry (MIG MS): A New Tool for Analysis of Volatile Organic Compounds Antonín Bednařík, Masaryk University, Brno, Czech Republic
12:30-12:50	O14	The Potential of Stainless Steel Needles to Integrate Microextraction and Mass Spectrometry Jaime Millán-Santiago, University of Cordoba, Cordoba, Spain
12:50-14:30	Lunch - Hotel Restaurant	

14:30–15:30	Poster Session 1 – Rooms 4 and 5	
	Session 5 – Microfluidics II – Room 2 *Chair: Jakub Novotný, Institute of Analytical Chemistry of the CAS, Brno, Czech Republic*	
15:30–16:00	KN5	When Microfluidics Meets Magnetic Nanomaterials: Recent Approaches in Bioanalysis Zuzana Bílková, University of Pardubice, Pardubice, Czech Republic
16:00–16:20	O15	Nanogels for Multifunctional Biomolecular Electrophoresis Assays Lisa Holland, West Virginia University, Morgantown, WV, USA
16:20–16:40	O16	Dry and Wet Assembly Approaches for Arranging Ordered Particle Monolayers and Arrays Ignaas S.M. Jimidar, Vrije Universiteit Brussel, Brussels, Belgium
16:40–17:00	O17	Investigation of the Effect of Induced Macromolecular Crowding on Hyaluronidase Catalytic Activity and Interactions using Capillary Electrophoresis and Microscale Thermophoresis Zahia Bouchelaghem, University of Orleans. Orleans, France
17:00–17:20	O18	Novel Approaches for the Analysis of Organoids and Organ-on-Chip Samples using Liquid Chromatography and Mass Spectrometry Steven Ray Haakon Wilson, University of Oslo, Oslo, Norway
	Session 6 – Biomarkers – Room 3 *Chair: Pavel Kubáň, Institute of Analytical Chemistry of the CAS, Brno, Czech Republic*	
15:30–16:00	KN6	The Study of Sputome: A Need for Sputum as a Rich Source of Protein Biomarkers for the Non-Invasive Diagnosis of Infectious and Chronic Diseases Norberto A. Guzman, Princeton Biochemicals, Princeton, NJ, USA
16:00–16:20	O19	Monitoring the Effectiveness of Chemotherapy Treatments Utilizing Artificial Intelligence-based N-Glycome Analysis Rebeka Török, University of Pannonia, Veszprem, Hungary
16:20–16:40	O20	N-Glycosylation Analysis of Homogenized Oral Squamous Cell Carcinoma Soft Tissue Samples by CE-LIF Eniko Gebri, University of Debrecen, Debrecen, Hungary
16:40–17:00	O21	Ionic Liquids Assisted Micellar Electrokinetic Chromatography of Urine Catecholamine Metabolites for the Investigation of Neuroblastoma Ilona Olędzka, Medical University of Gdańsk, Gdańsk, Poland
17:00–17:20	O22	Novel Magnetic Solid-Phase Microextraction Approach with Ionic Liquids and a Surfactant as Coating Materials for Pretreatment of Biological Samples Alina Plenis, Medical University of Gdańsk, Gdańsk, Poland

May 21, 2024 (Tuesday)

	SCIEX Session - Room 1 *Chair: Vincent T. Remcho, Oregon State University, Corvallis, OR, USA*	
09:00-09:10	SCIEX Medal & Award	
09:10-09:50	PL3	Capillary Electrophoresis and Taylor Dispersion Analysis: Recent Advances and Present Challenges in Health Applications Hervé Cottet, University of Montpellier, Montpellier, France
09:50-10:20	Coffee Break	
	Session 7 - Microscale Separations for Omics Sciences - Room 2 *Chair: Andrea Gargano, University of Amsterdam, Amsterdam, The Netherlands*	
10:20-10:50	KN7	Native N-Glycome of Single Mammalian Cells and ng-Level Blood Isolates Deciphered using Label-Free Capillary Electrophoresis-Mass Spectrometry Alexander R. Ivanov, Northeastern University, Boston, MA, USA
10:50-11:10	O23	Deciphering the Phosphorylation Barcode of G Protein-Coupled Receptors (GPCRs) using CZE-TDMS Kevin Jooß, Vrije Universiteit Amsterdam, Amsterdam, The Netherlands
11:10-11:30	O24	Intramolecular Disulfide and Charge Variant Separation and Characterization of Various Antibody Subunits with CE-MS/MS Jasmin Schairer, Aalen university, Aalen, Germany
11:30-11:50	O25	Toward 1000-fold Sensitivity Improvement of Capillary Electrophoresis coupled with Laser-Induced Fluorescence Detection for Aminopyrene Trisulfonic Acid Fluorophore Chenchen Liu, Kyushu University, Fukuoka, Japan
11:50-12:10	O26	Charge to Move Forward in Volume-Restricted Metabolomics Rawi Ramautar, Leiden University, Leiden, The Netherlands
12:10-12:30	O27	Online Electrokinetic Sample Cleanup and Evaluation Method for APTS Labeled N-Glycan Separation by Capillary Electrophoresis Gabor Jarvas, University of Pannonia, Veszprem, Hungary
	Session 8 - Bioanalysis/Cellular Analysis - Room 3 *Chair: Lucie Korecká, University of Pardubice, Pardubice, Czech Republic*	
10:20-10:50	KN8	Bioanalytical Approaches for Monitoring Cellular Communication Michael Roper, Florida State University, Tallahassee, FL, USA
10:50-11:10	O28	Single Islet Metabolomics using Capillary LC-MS James Edwards, Saint Louis University, St. Louis, MO, USA
11:10-11:30	O29	Kinase/Small Inhibitor Interaction Evaluated Directly in Cell Lysates and Whole Cells: A Combined Capillary Electrophoresis and Microscale Thermophoresis Study Reine Nehmé, University of Orleans, Orleans, France

11:30–11:50	O30	Digging into the Multifaceted Variability of Antibody Molecules: Fc-Proteoform Profiling Illuminates Autoimmune Responses in Rheumatoid Arthritis Constantin Blöchl, Leiden University Medical Center, Leiden, The Netherlands
11:50–12:10	O31	Isotachophoresis for Electrokinetic Preconcentration of Extracellular Vesicles by Capillary Electrophoresis Delaram Zohouri, University Paris Saclay, Orsay, France
12:10–12:30	O32	Enrichment and Identification of Ceramide Synthase 2 in Subcellular Components: Novel Insights from Porcine Pancreatic Tissue Egzontina Shabani, University of Pardubice, Pardubice, Czech Republic
12:30–14:00	Lunch – Hotel Restaurant	
14:00–15:00	Poster Session 2 - Rooms 4 and 5	
16:00–18:45	Tour of the Mendel Museum	
19:00–21:00	Banquet – Augustinian Abbey (Garden of Eden of the Monastery courtyard)	

May 22, 2024 (Wednesday)

	Session 9 - Biosensors - Room 2 *Chair: Steven Ray Haakon Wilson, University of Oslo, Oslo, Norway*	
09:00-09:30	KN9	Glycosylation as a Tool for Biomarker Discovery in Cancer using Exosomes Jan Tkac, Institute of Chemistry, Slovak Academy of Sciences, Bratislava, Slovakia
09:30-09:50	O33	Artificial Intelligence-Aided Massively Parallel Spectroscopy for Bioaffinity Assays and Droplet Microfluidics Antonín Hlaváček, Institute of Analytical Chemistry of the CAS, Brno, Czech Republic
09:50-10:10	O34	3D Made Electrochemical Sensors Agata Michalska, University of Warsaw, Warszawa, Poland
10:10-10:30	O35	From Separation to Treatment: Development of a Microbead-Based Extracorporeal CTC Capture Platform Dora Szerenyi, University of Pannonia, Veszprem, Hungary
	Session 10 - Pharma and Biopharma Applications - Room 3 *Chair: Kevin Jooß, Vrije Universiteit Amsterdam, Amsterdam, The Netherlands*	
09:00-09:30	KN10	AQbD, ICH Q14 – Should I Bother and What Does This Mean for My CE Method Development? Cari E. Sänger – van de Griend, Kantisto BV, Baarn, The Netherlands
09:30-09:50	O36	Towards Immunoglobulomics - IgG, IgA and IgM Fc Profiling by Light Chain Affinity Capturing by Nano-LC-MS Christoph Gstöttner, Leiden University Medical Center, Leiden, The Netherlands
09:50-10:10	O37	Ultra-Miniaturized Weak Affinity Chromatography Coupled with Mass Spectrometry (nano-WAC-MS) as a Powerful Screening Strategy of Native Membrane Proteins in Fragment Based Drug Discovery: Adenosine Receptor as a Case-Study François-Xavier Vidal, Claude Bernard University Lyon 1, Lyon, France
10:10-10:30	O38	Unravelling Functional Changes in Antibody Proteoforms using Affinity CE-MS Elena Domínguez-Vega, Leiden University Medical Center, Leiden, The Netherlands
10:30-11:00	Coffee Break	
	Session 11 - Advances in Microscale CE and LC Separations II - Room 2 *Chair: Victor U. Weiss, Vienna University of Technology, Vienna, Austria*	
11:00-11:30	KN11	Biopharmaceuticals by Capillary Electrophoresis: Mass Spectrometry, Affinity, Isoelectric Focusing, Process Analysis Hermann Wätzig, University of Braunschweig, Braunschweig, Germany
11:30-11:50	O39	Behavior of Weak Electrolytes in the Diffuse Layer of the Double Layer Bohuslav Gas, Charles University, Prague, Czech Republic
11:50-12:10	O40	Refractive Index Detector Based on a Young Interferometer for Electroseparation Methods Ruchi Gupta, University of Birmingham, Birmingham, United Kingdom

12:10–12:30	O41	Characterization of Nanoparticles in Mixtures by Capillary Electrophoresis and Taylor Dispersion Analysis Hyphenated to ICP-MS Jan Petr, Palacky University Olomouc, Olomouc, Czech Republic
	Session 12 – Point-of-Care Devices – Room 3 *Chair: Elena Dominguez Vega, Leiden University Medical Center, Leiden, The Netherlands*	
11:00–11:30	KN12	Exhaled Breath, Saliva, Sweat: New, Emerging, Alternative Samples in Non-Invasive Medical Diagnostics Petr Kubáň, Institute of Analytical Chemistry of the CAS, Brno, Czech Republic
11:30–11:50	O42	Fully Autonomous Processing and Analysis of Dried Blood Spots Collected by Volumetric Absorptive Microsampling Pavel Kubáň, Institute of Analytical Chemistry of the CAS, Brno, Czech Republic
11:50–12:10	O43	Electrochemical Immunoassay-based Sensors Towards Point-of-Care Diagnostics: Recent Progress and Challenges in Multiple Biomarkers Detection Lucie Korecká, University of Pardubice, Pardubice, Czech Republic
12:10–12:30	O44	Microfluidic Capillary Electrophoresis for In-line Dual-stage Enrichment and Unattended Sampling: From Instrumental Conception to Bioanalytical Applications Thanh Duc Mai, University Paris Saclay, Orsay, France
12:30–14:00	Lunch – Hotel Restaurant	
	Plenary Lectures 2 – Room 1 *Chair: Frantisek Foret, Institute of Analytical Chemistry of the CAS, Brno, Czech Republic*	
14:00–14:10	Jaroslav Janák Medal & Award	
14:10–14:50	PL4	Comprehensive N-Glycan Profiling in Cancer Research: Past, Present and Future Milos V. Novotny, Indiana University, Bloomington, IN, USA
14:50–15:30	PL5	Analysis of Proteins and Peptides by Native and SDS Capillary Agarose Gel Electrophoresis Online Coupled to Electrospray Ionization Mass Spectrometry Andras Guttman, University of Debrecen, Debrecen, Hungary
15:30–17:00	Young Scientists and Best Poster Awards	
	Announcement of MSB 2025	
	Closing Remarks, Farewell Drink	

POSTERS

Poster Instructions

- Posters should be up Monday-Wednesday during the entire symposium.
- Posters should preferably be mounted on Sunday afternoon May 19, but not later than Monday morning May 20 before 9:00.
- Poster presentations are assigned a number that will also be attached to the poster board; authors should mount their posters only on their assigned boards.
- The preferred poster size is A0 (portrait). Nevertheless, the maximum poster size is 100 x 120 cm vertical (portrait) orientation. The poster does not necessarily have to fill the entire board area.
- Poster mounting material will be available.
- Two poster sessions are scheduled: Monday, May 20, 14:30-15:30, and Tuesday, May 21, 14:00-15:00.
- Presenters of a poster with an even number should be at their poster during the poster session on Monday; presenters of posters with an odd number should be at their poster during the poster session on Tuesday.
- Poster should be taken down on Wednesday, May 22 between 13:30 and 14:00.
- Any posters left after the symposium closing session will be removed by the organizers and recycled.

List of Poster Presentations

- in the alphabetical order of the presenting author

P1 Noncovalent Labeling of Proteins in Sodium Dodecyl Sulfate Capillary Gel Electrophoresis
Felicia Auer, Andras Guttman

P2 Electrophoretic Separation of DNA Fragments in Deuterated Water
Jan Badin, Ivona Voráčová, Petr Táborský, Marcus Gassmann, František Foret

P3 Deterministic Lateral Displacement for Separation in Microscale: Particle and Microbial Cell Analysis
Violina B. Barbosa, Laura Cerqueira, João M. Miranda, Nuno F. Azevedo

P4 Identification of Mephedrone Synthesis Reagents using CEMs
Iwona Biel, Katarzyna Czyżowska, Paulina Kraus, Paweł Mateusz Nowak, Michał Woźniakiewicz

P5 Analysis of N-linked Glycans by CE/LIF Using Various Glycoproteomic Protocols
Janette Bobalova, Denisa Smolkova, Dana Strouhalova, Richard Cmelik, Jana Lavicka

P6 Tools That Improves Concentration Sensitivity in Capillary Electrophoresis-Frontal Analysis for Affinity Studies
Taťána Bržezická, Lenka Kohútová, Hana Mlčochová, Tereza Zapletalová, Zdeněk Glatz

P7 Separation Conditions for Oligonucleotides by CE-MS
Maria Butnariu, Dušan Koval

P8 Microfluidic Capillary Electrophoresis – Mass Spectrometry for Rapid Charge-Variant and Glycoform Assessment of Monoclonal Antibody Biosimilar Candidates
Ruben Cageling, Sara Carillo, Anja Boumeester, Karin Lubbers-Geuijen, Jonathan Bones, Kevin Jooß, Govert W. Somsen

P9 Unlocking New Perspectives: Fluorinated Sugars and Their Enhanced Lectin Binding Abilities
Jakub Červený, Martin Kurfiřt, Pavla Bojarová, Jindřich Karban

P10 Study of Selected Analytes in in Vitro Fertilization Culture Medium by Capillary Electrophoresis
Petra Crhonková, Taťána Bržezická, Lenka Kohútová, Zdeněk Glatz

P11 Multi-Material 3D-Printing Fabrication of Microfluidic Devices
Reverson F. Quero, Fernando Henrique M. Costa, Mathias Stahl Kavai, Dosil P. de Jesus, José A. F. da Silva

P12 Determination of Unbound Fraction of Selected Antiepileptic Drug Using Ultrafiltration and LC-MS method
Viktoria Ďurčová, Marta Pelcová, Zdeněk Glatz, Jan Juřica

P13 Sorbentless Dried Blood Spot Sampling for Automated DBS Analysis
Miloš Dvořák, Sylvie Profousová, Pavel Kubáň

P14 Investigation of the Effect of Maternal Obesity and Gestational Diabetes on the N-Glycosylation of Human Immunoglobulins
Anna Farkas, András Guttman, Oksana Matsyura, Lesya Besh, Sándor G. Vári

P15 Decoding the Human Seminal Plasma Metabolome: Assessment of the Performance of Different Sample Preparation Strategies
Luz Alonso-Dasques, María Morán-Garrido, Laura Mayo-Martínez, Érica A Souza-Silva, Ameer Y. Taha, Coral Barbas, Víctor González-Ruiz

P16 Investigating Collagen-Protein Interactions Using Affinity Capillary Electrophoresis: Method Development and Use of Correction Factors
Sophie Hartung, Christin Scheller, Hermann Wätzig

P17 Automated Sample Preparation of Human Tissue Specimens to Search for N-Glycan-based Biomarkers
Eniko Gebri, Kinga Hogyor, Adrienne Szabo, Gabor Jarvas, Zuzana Demianova, Andras Guttman

P18 Liquid Biopsy Testing – Isolation Method for Targeted Nucleic Acid Biomarkers
Helena Hrušková, Roman Řemínek, František Foret

P19 New Tools for Peptide Retention Time Predictions in Proteomics
Kateřina Hrůzová, Martina Nechvátalová, Jan Valášek, Jiří Urban

P20 Combining Three-Dimensional Printed Miniaturized Microextraction Device and Elemental Extractant for Detection of Toxic Metal Ions
Shivangi Singh, Emmanuvel Arputharaj, Yu-Hui Huang, You-Rong Wu, Yeou-Lih Huang

P21 Microfluidic Automation of Library Preparation for Nanopore Sequencing
Jacob F. Hess, Julian Rüdiger, Tobias Hutzenlaub

P22 Microfluidic Automation of Sample Preparation Techniques for Proteomics
Jan-Niklas Klatt, Michelle Hinrichs, Tobias Hutzenlaub

P23 Online Coupling of Size-Exclusion Protein Separation with Monolithic Enzymatic Reactor
Anna Kosmáková, Aryna Paulenka, Jiří Urban

P24 The Evaluation of Galectin-1 – Glycopeptide Interactions by Affinity Monolith Chromatography
Maria Butnariu, Dušan Koval

P25 Microfluidic Chip for Cell Lysis: Towards Single-Cell Immunochemistry in Microdroplets
Jana Krivankova, Julie Weisova, Antonin Hlavacek

P26 How Can Electrochemistry Help with Drug Testing?
Anna Kubíčková, Lucie Pražáková, Jan Fischer

P27 Humic Acid Modified Paper as an Affordable Cation Exchanger Sorbent to Isolate Basic Drugs from Saliva Samples
Carlos Calero-Cañuelo, Rafael Lucena, Soledad Cárdenas

P28 Sample Preparation for Proteomic Analysis - Greenness Evaluation
Katarína Maráková, Radovan Tomašovský, Marina Opetová, Kevin A. Schug

P29 A Simplified Protocol for Intact Exosome Separation using Low-Pressure Size-Exclusion Chromatography
Ondrej Moravek, Zuzana Vankova, Malena Mandzi, Robert Jirasko, Zuzana Kozovska, Rudolf Kupcik, Zuzana Bilkova, Michal Holcapek

P30 From Model to Practice: Developing an Enrichment and Recovery System to Facilitate Rapid Pathogen Detection
Patrick Raphael Muschak, Zehua Liu, Sonja Berensmeier, Sebastian Patrick Schwaminger

P31 Acoustophoretic Focusing of Microparticles in Glass Microfluidic Device
Jakub Novotny, Lucie Brezinova, Anna Tycova

P32

P33 Glycoform Equivalence Assessment of Biotherapeutics with N-and O-Glycosylation Sites by Sequential Intact Mass Spectrometry
Myung Jin Oh, Hyun Joo An

P34 First Data on Alpelisib Concentrations in Plasma Determined by HPLC-FLD Method
Eva Krejčířová, Marta Pelcová, Zdeněk Glatz, Jan Juřica

P35 Therapeutic Drug Monitoring of Colistin Supported by Lipidomics in Critically Ill Patients

Juraj Piestansky, Ivana Gerhardtova, Ivana Cizmarova, Marian Koval, Andrej Kovac

P36 Novel Approaches using Fluorescence Spectroscopy for Smoke Taint Determination
Erin Kalbaugh, Vincent T. Remcho

P37 Novel Microsampling Approach Based on Solid-Phase Microextraction for Monitoring the Level of Tryptophan and Its Metabolites in Human Serum and Urine Samples
Anna Roszkowska, Ilona Olędzka, Piotr Kowalski, Natalia Miękus-Purwin, Kamila Langowska, Tomasz Bączek

P38 Determination of Organic Acids in Infants Faeces Using a CE-C4D In-house Built Instrument
Marcelina Rusin, Joanna Pluta, Aneta Woźniakiewicz, Justyna Dobrowolska-Iwanek, Michał Woźniakiewicz

P39 Application of the DLLME/GC-MS Method of the Identification of Aromatic Amines Derived from Azo Dyes for Forensic Analysis of Fibers
Anna Sałdan, Michał Woźniakiewicz, Paweł Kościelniak

P40 Identification of Aspergillus Species using CE in Capillary with Roughened Part and MALDI TOF MS
Jiří Šalplachta, Anna Kubesová, Pavel Karásek, Filip Růžička, Michal Roth

P41 Enzyme Kinetic Studies in Droplet Microfluidic Device with Fluorescence Detection
Michal Sedlák, Lukáš Jordán, Marta Pelcová, Zdeněk Glatz

P42 Rhodamine B-based Labeling for Oligosaccharide and Glycan Analysis by CE/LIF
Jozef Sestak, Filip Dusa, Denisa Smolkova, Richard Cmelik, Andras Guttman, Jana Lavicka

P43 Synthesis of Bifunctional Non-Covalent Molecularly Imprinted Polymers (MIPs) for Selective Extraction of Catecholamines and their Metabolites
Antons Podjava, Artūrs Šilaks, Laura Bernāte, Jorens Kviesis, Valda Valkovska

P44 Navigating the Complex Landscape of Glycoproteomics: Challenges in Large-Scale Data Analysis
Adam Paulin Urminsky, Noortje de Haan, Tomas Henek, Lenka Hernychova

P45 Micromachined Nanospray Interfaces for Fast and Sensitive Bioanalyses
Tomáš Václavek, Elizaveta Vereshchagina, Leny Nazareno, Anand Summanwar, František Foret, Roman Řemínek

P46 Design of Experiments-Based Optimization of Microflow LC-MS Method Applicable in Proteomics Analysis
Jan Valasek, Antonin Bednarik, Martina Nechvatalova, Jan Preisler, Jiri Urban

P47 Top-down Analysis of Snake Venoms with CZE-MS
Gayatri Vishwakarma, Melinda Andrasi, Ruben Szabo, Peter Hajdu, Vladimir Petrilla, Monika Petrillová, Jaroslav Legath, Attila Gaspar

P48 Analysis of Biothiols in Non-Invasive Sample Matrix with the Use of Gold-Based Nanostructures
Jiri Volanek, Vladimir Jonas, Vera Dosedelova, Petr Kuban

P49 Simple Separation Device for Fast Sample Desalination
Ivona Voráčová, Vanda Kociánová, Yann Astier, Doo Soo Chung, František Foret

P50 The New Format of Stop-Flow Thermophoretic Measurement in the Narrow-Bore Transparent Capillary
Michał Woźniakiewicz, Paweł Mateusz Nowak, Aleksandra Zima, Alicja Bis, Iwona Biel

Last-minute posters

P51 Capillary Electrophoresis Analysis of Brain Tissue N-Glycosylation
Beatrix Kiss, Rebeka Török, Gábor Járvás, Zuzana Demianova, Hyun Joo An, András Guttman

P52 Analysis of NIST mAb Reference Material by Parallel CE-SDS
Johannes Schlecht, Christian Wenz, Jana Steflova

P53 Enhanced Fluorescent Detection of Oxaliplatin via BSA-Copper Nanoclusters: A Targeted Approach for Cancer Drug Monitoring
Yahya S. Alqahtani, Ashraf M. Mahmoud, Mohamed M. El-Wekil