

Dr. Yury O. Tsybin

Director, Biomolecular Mass Spectrometry

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PROFESSIONAL EXPERIENCE

Spectroswiss Sàrl
EPFL Innovation Park, Lausanne, Switzerland, www.spectroswiss.ch



2014 - Current **CEO and Founder**

École Polytechnique Fédérale de Lausanne (EPFL)
Lausanne, Switzerland



2006 - 2014 **Assistant Professor of Physical and Bioanalytical Chemistry**
Head of the Biomolecular Mass Spectrometry Laboratory

2006 - 2014 **Director, Mass Spectrometry Service Facility**
Institute of Chemical Sciences & Engineering

RESEARCH EXPERIENCE

2004 – 2006 **Postdoctoral research associate, National High Magnetic Field Laboratory, FL, USA** | Advisor: Prof. Alan G. Marshall
Research: Mass spectrometry for improved macromolecular structure analysis

2000 – 2004 **Ph.D. student, Angstrom Laboratory, Uppsala University, Uppsala, Sweden** | Supervisor: Prof. Per Hakansson
Dissertation title: High rate electron capture dissociation Fourier transform ion cyclotron resonance mass spectrometry
Date of degree awarded: May 24, 2004

EDUCATION

2000 – 2004 **Ph.D. in Ion Physics (Degree date: 24 May 2004)**, Uppsala University, Uppsala, Sweden

1994 – 2000 **M.Sc. in Technical Physics**, State Polytechnical University, Saint-Petersburg, Russia

1997 – 1998 **Entrepreneurship License**, the Finnish Ministry of Education, Jyväskylä Institute of Technology

AWARDS AND HONORS

- 2016 Curt Brunnée Award of the International Mass Spectrometry Foundation (IMSF), www.imss.nl
"For outstanding contributions to the development of instrumentation for high-resolution and tandem mass spectrometry"
- 2015 Winner of Venture Kick Competition Stage I for Spectroswiss Inc., www.venturekick.ch
- 2014 The SGMS Award of the Swiss Group for Mass Spectrometry, www.sgms.ch
- 2012 European Young Chemist Award, Silver Medal, 4th EuCheMS Conference
- 2012 Invited Professor (1 month), Ecole Polytechnique, Palaiseau, France
- 2011 Recipient of the ERC Starting Grant (panel PE4):
"Super-resolution mass spectrometry for health and sustainability", SRMS4HESUS
- 2011 Recognized as "Outstanding reviewer for the Journal of the American Society for Mass Spectrometry" at the JASMS Editorial Board Meeting, the 59th ASMS Conference, Denver, CO
- 2011 Invited Professor (1 month), University of Vienna, Vienna, Austria
- 2009 Invited Professor (1 month), University of Claude Bernard Lyon 1, France
- 2006 Young Investigator Award, finalist. Human Proteome Organization (HUPO)

SUPERVISION AND MENTORING

2006-2016 Supervised **6** PhD students (all graduated from EPFL), co-supervised **1** PhD student (graduated from University of Geneva), supervised **10** postdoctoral scholars, **7** M.Sc. & **3** B.Sc. students

EDUCATIONAL ACTIVITY

2018-currently Advanced short course on "FTMS Fundamentals and Data Processing" (on-site and/or on-line)

2006-currently Organization of and teaching at Summer and Winter PhD Schools in Mass Spectrometry (English)

2006-2014 Teaching of an advanced PhD level course Current Topics in Mass Spectrometry (English/French) at EPFL/UNIL

2006-2014 Teaching at EPFL/UNIL: General Chemistry (BSc, French); Structure Analysis of Organic Molecules (BSc, French); Fundamentals of Mass Spectrometry (MSc, English)

PUBLICATIONS

Patents/copyrights: **7**; Reviews/chapters: **8**; Research papers: **111**; h-index: **37** (Google Scholar), **32** (Scopus)
ORCID Researcher ID: orcid.org/0000-0001-7533-0774

PRESENTATIONS

Invited oral presentations, in total >150, including: Plenary invited talks at the International Conferences & Workshops: >15; Regular invited talks at the International Conferences & Workshops: >60; Invited talks at academia/industry seminars: >60; Lectures at summer/winter schools for PhD students and industrial scientists: >20. Regular oral presentations at major international conferences: >20, including ASMS: 5; Talks at ASMS as a principal co-author: 10. Poster presentation as an author or a co-author: >60, including ASMS: >40

COMMITTEE ACTIVITY AND COMMUNITY SERVICE

Member, for Education, Swiss Group for Mass Spectrometry Board. Details: www.sgms.ch
Member, Editorial Board for the peer-reviewed *International Journal of Mass Spectrometry*
Member, Editorial Advisory Board for the peer-reviewed *European Journal of Mass Spectrometry*
Member, Board of Directors of Top-Down Proteomics Consortium, www.topdownproteomics.org
Member, Industrial Scientific Advisory Board for Horizon 2020 project EPIC-XS, on-going
Member, External Expert Board for the ICR Program, National High Magnetic Field Laboratory, Tallahassee, FL, USA
Member, External Reviewer Panel for the French FTMS user network, France. Details: www.fticr.org
Member, Scientific Advisory Board for Horizon 2020 project METASPACE (completed)
Member, External Advisory Board for the FP7 project High Speed Proteomics Analysis (completed)
Member, Committee for Doctoral Program in Chemistry and Chemical Engineering, EPFL (2007-2014)
Expert on PhD defenses both internally and externally to EPFL: 19; President at PhD defenses: 2
Membership: Am. Chem. Soc.; Swiss Chem. Soc.; Am. Soc. Mass Spectrom.; Swiss Group Mass Spectrom., Human Proteome Organization; Russian Mass Spectrom. Society
President: Russian Mass Spectrometry Interest Group @ American Society for Mass Spectrometry, 2014-2015, 2017-2018

CONFERENCES & WORKSHOPS ORGANIZATION

Co-Organizer, Annual Swiss Group for Mass Spectrometry meeting, Beatenberg, Switzerland, 2010-2021
Organizer, FTMS School at the Swiss Group for Mass Spectrometry meeting, Beatenberg, Switzerland, 2018
Co-Organizer, The 3rd International Mass Spectrometry Summer School, Dubrovnik, Croatia, 2017
Co-Organizer, Summer School on Mass Spectrometry in Biotechnology & Medicine, Dubrovnik, Croatia, 2008-2017
Organizer, Doctoral Summer School "Frontiers in Mass Spectrometry", Villars-sur-Ollon, Switzerland, 2009
Principal Co-Organizer, 9th European FTMS Workshop, Lausanne, Switzerland, 2010
Organizer, Winter Doctoral School "Electron capture and transfer dissociation", Villars-sur-Ollon, Switzerland, 2011
Organizer, 8th UppCon Conference on Radical Ion Chemistry in the Gas Phase, Villars-sur-Ollon, Switzerland, 2011
Coordinator, ASMS FTMS Interest Group Annual Meetings, USA, 2007, 2008, 2009; 300 participants/year
Session chair: numerous services at ASMS, SGMS, EFTMS, IMSC, summer schools, etc.

REVIEWING ACTIVITY

Journals: J. Am. Chem. Soc.; J. Am. Soc. Mass Spectrom.; Ang. Chemie Int. Ed., Anal. Chem.; Anal. Bioanal. Chem.; J. Prot. Res.; Rapid Commun. Mass Spectrom.; Int. J. Mass Spectrom., Mol. Cell. Prot., Analyst, PNAS, etc.
Funding agencies: Swiss National Science Foundation (Switzerland), French National Research Agency (ANR, France), Hercules Foundation (EU), European Science Foundation (EU)

FUNDING ID

Total (PI): 3'884 kEuro

- 2021-2025 FET Open Grant, EU Horizon 2020 (co-PI), «Ariadne: Redefining mass spectrometry – a breakthrough platform for real-time noninvasive breath analysis with single ion detection of intact viruses and bacteria and post-analysis molecular characterization». Total amount for this PI: 450'000 Euros
- 2021-2022 FET Innovation Launchpad Grant, EU Horizon 2020 (PI), «A2MStools: Tools to access and analyze un-reduced mass spectrometry data to accelerate access to biotherapeutics». Total amount: 100'000 Euros
- 2019-2021 FET Open Grant, EU Horizon 2020 (co-PI), «TopSpec: Next generation precision antibody profiling - from science fiction to reality». Total amount for this PI: 430'000 Euros
- 2018-2021 Eurostars Eureka Grant (co-PI), "AerOrbi: Aerosol soft photo ionization Orbitrap mass spectrometry". Total amount for this PI: 350'000 Euros
- 2017-2018 ERC Proof of Concept Grant (PI), "Precision mass spectrometry to leverage applications in life and environmental sciences". Total amount: 150'000 Euros
- 2015-2016 ERC Proof of Concept Grant (PI), "Advanced signal processing of time-domain data in mass spectrometry to leverage life sciences". Total amount: 150'000 Euros
- 2011-2016 ERC Starting Grant (PI), "Super resolution mass spectrometry for health and sustainability". Total amount: 1'425'731 Euros
- 2015-2020 SPECo (Economic and Commercial Promotional Service, canton Vaud, Switzerland) promotion of innovative start-up companies in the Vaud region (PI). Total amount: 100'000 Euros
- 2013-2016 Swiss National Science Foundation (PI), Independent Basic Research Grant. "Advancing mass spectrometry-based protein structure analysis at the proteoform level for comprehensive description of biological systems". Total amount 175'000 Euros
- 2009-2014 Swiss-Russia Science & Technology Cooperation Program. PI, mobility grants. Total amount: 32'100 Euros
- 2010-2012 Swiss National Science Foundation, Swiss-Russia Science and Technology Cooperation Program (PI), "High performance mass spectrometry with predictive liquid chromatography for on-line protein characterization and in-depth systems biology data mining". Total amount: 180'000 Euros
- 2008-2011 Swiss National Science Foundation, SystemsX (www.systemsx.ch) Initiative (co-PI). "Metabolic network in *Mycobacterium tuberculosis*". Total amount for this PI: 131'000 Euros