Soma Vesztergom
Curriculum Vitæ

Contact

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Personal data

Birthdate & place:	Budapest, Hungary, 8th July 1986.
Citizenship:	Hungarian

Academic positions

Mar 2015 – present assistant professor
Eötvös Loránd University of Budapest, Faculty of Science
Institute of Chemistry
Department of Physical Chemistry
Laboratory of Electrochemistry & Electroanalytical Chemistry

Mar 2014 – Feb 2015 researcher at the Department of Chemistry and Biochemistry,
University of Bern, Switzerland

Education

Sep 2010 – Feb 2014 PhD (*summa cum laude*, physical chemistry – electrochemistry)
Eötvös Loránd University (supervisor: *Prof. Győző G. Láng DSc*)

Sep 2005 – Jun 2010 MSc in chemistry
(Eötvös Loránd University)

Professional experience

Since 2015	My primary research activities are targeted on the electrochemical reduction of carbon dioxide and on cathodic hydrogen evolution.
Since 2013	I conduct research on the digital simulation of electrode processes, utilizing — primarily — finite element and finite volume methods.

Since 2011	I conduct research on the electrochemical properties of ionic liquids (room temperature molten salts).
Since 2011	I am involved in a joint development project (together with *Prof. Attila Tihanyi* of Pázmány Péter Catholic University) aimed at instrumental innovations in electrochemistry.
Since 2010	I work in the field of electrochemical impedance spectroscopy. I designed a standalone electrochemical measurement and analysis system that is capable of measuring the impedance of electrochemical systems and of fitting the spectra based on flexibly defined physico-chemical model functions.
Since 2008	I work on the development of an electrochemical workstation capable of carrying out advanced rotating ring-disk electrode experiments based on the independent and dynamic potential control of both the generator and the collector electrodes. These experimental methods extend the applicability and sensitivity of RRDEs and are providing a better understanding of electrode process mechanisms.

Teaching activities

Since 2020	I act as secretary to the Scientific Students' Associations at the Institute of Chemistry, Eötvös Loránd University.
In 2018	I started a doctoral course on *Digital Simulation in Electrochemistry* at the Chemistry PhD School of Eötvös Loránd University.
Since 2016	I act as a supervisor of PhD theses in the Chemistry PhD School of Eötvös Loránd University. I currently supervise one PhD student (Noémi Kovács, submitted a thesis in 2020, expected defense: early 2021).
Since 2016	I organize the MSc course *LabVIEW programming*.
Since 2016	I give lectures on the *History of Chemistry*.
Since 2015	I organize the MSc course *Computers, Electronics and Measurements*.
Since 2012	I give physical chemistry seminars for students in chemistry.
Since 2012	I act as thesis advisor for students in chemistry (Eötvös Loránd University) and information science and technology (Pázmány Péter Catholic University).
Since 2008	I give physical chemistry laboratory classes for students in chemistry from Eötvös Loránd University, as well as for students in pharmacy from Semmelweis University (both in Hungarian and in German).

Skills and competences

Electrochemistry:	Familiar with routine and advanced electrochemical experimental methods (voltammetry, impedance spectroscopy, hydrodynamic methods, electrochemical quartz-crystal microbalance measurements, etc.).
Instrumentation:	Familiar with the basics of electrical engineering. Expert in the fields of digital signal acqusition, waveform conditioning, filtering and analysis techniques. Experienced in working with embedded systems (Microchip PIC32 microcontrollers, National Instruments reconfigurable I/O systems).

Languages:	Fluent in English and German.
Programming:	Expert in LabVIEW (most often used language). I also work regularly in other programming languages, like C++ and C (mostly on embedded systems), and VisualBasic.
PC skills:	Active user of most basic computer software (Microsoft Word, PowerPoint, Excel, LaTeX, PhotoShop, CorelDraw, Origin, Mathematica, etc.)

International experience

2011 Apr–May 8 weeks fellowship at the University of Ulm (group of Prof. Dr. Dieter M. Kolb), studying the impedance of gold single crystal | ionic liquid interfaces. (Scholarship granted jointly by the Deutscher Akademischer Austauschdienst and the Hungarian Fellowship Committee, direct supervisor: Dr. Tamás Pajkossy.)

2013 Sep–Oct 8 weeks fellowship at the University of Ulm (group of Prof. Dr. Timo Jacob), studying the physical properties of metal single crystal | ionic liquid interfaces, as well as the kinetics of metal deposition in ionic liquid systems. (Scholarship granted jointly by the Deutscher Akademischer Austauschdienst and the Hungarian Fellowship Committee, direct supervisor: Dr. Tamás Pajkossy.)

March 2014 – March 2015 1-year fellowship within the framework of the Scientific Exchange Programme NMS^{ch} at the Electrochemical Nanoscience group of the University of Bern. Supervisor: Prof. Dr. Peter Broekmann. Research topic: "Structure and reactivity studies with 'inert' and redox-active room temperature ionic liquids at well-defined single crystal electrodes by the use of conductive-probe atomic force microscopy".

2015 – 2020 (Jun–Aug) I spent six times three summer months at the University of Bern as a guest researcher in Prof. Dr. Peter Broekmann's group, where my primary research area was the electrochemical reduction of carbon dioxide.

Affiliations and services to the scientific community

Since 2018 secretary to the Electrochemistry Committee of the Hungarian Academy of Sciences.

In 2017 secretary to the local organizing committee of the 6th Regional Symposium on Electrochemistry of South-East Europe (6th RSE–SEE), held at Balatonkenese, Hungary, from 11 to 15 June 2017.

2015–2020 organizer of "Alchemy Today", a presentation series of Eötvös Loránd University, popularizing chemistry among high school students.

Since 2015 member of the public body of the Hungarian Academy of Sciences and its Electrochemistry Committee.

Since 2008 member of the International Society of Electrochemistry (ISE).

Grants obtained

Nov 2020 – Oct 2024 Principal investigator of the excellence grant of the National Research, Development and Innovation Office of Hungary (NKFIH FK–135375, "The Positive Side of Things: Efficient Catalysts for Anodic Water Splitting").

Oct 2018 – Sep 2020	Principal investigator of the postdoctoral excellence grant of the National Research, Development and Innovation Office of Hungary (NKFIH PD–124079, "Studying Electrochemical Processes Having a Key Role in Energy Conversion and Storage".
Since 2018	Investigator on the grant NKFIH K–112034, "Frequency-dependent double layer capacitances" of the National Research, Development and Innovation Office of Hungary (PI: Dr. Tamás Pajkossy).
Since 2016	Budget holder of the grant *From Atoms to Stars & Alchemy Today* of the National Cultural Fund of Hungary.
2015–2016	Co-investigator of *BoneStore, Nano-Tera.ch reference number: NextStep1.3* of the Swiss Research Program on Engineering.
2014–2015	*Structure and reactivity studies with 'inert' and redox-active room temperature ionic liquids at well-defined single crystal electrodes by the use of conductive-probe atomic force microscopy*. Fellowship obtained as a doctoral candidate from the „Scientific Exchange Programme between Switzerland and the New Member States of the European Union" (SciEx–NMS^{ch} 13.060); 1 year research-stay at the University of Bern. Supervisor: Prof. Dr. Peter Broekmann.
2013	*The development of a computer-controlled potentiostat for advanced electrochemical measurements.* Grant provided by the European Union and the State of Hungary (co-financed by the European Social Fund) in the framework of TÁMOP-4.2.4.A/2–11/1–2012–0001 'National Excellence Programme'). Grant closed in 2014 with an 'excellent' rating.

Awards

2015	Young Scientist Award of the 5th Regional Symposium on Electrochemistry for South-East Europe.
2009 and 2010	Fellowship granted by the Republic of Hungary (two times).
2009	1st prize at the Scientific Students' Associations National Conference joint with the Award for The Most Valuable Scientific Achievement and the Honorary Award of the Society of Pro Scientia Gold Medal Laureates.
2009	Dean's List Award (Eötvös Loránd University, Faculty of Science).
2008 and 2010	1st prize at the National Instruments for Virtual Instrumentation Programming Contests (two times).

Publications

As of 22 Dec 2020 I authored altogether 45 research papers in peer-reviewed scientific journals (in 18 cases as a first, corresponding or as a single author). I authored 7 book chapters (3 of them as first or single author). I participated and gave oral presentations at 15 international conferences (in 9 cases as an invited speaker).

My works received 788 citations according to Google Scholar.

A full and up-to-date list of my publications can be accessed at:
`https://m2.mtmt.hu/gui2/?type=authors&mode=browse&sel=authors10030159`.