Ivan Halasz, PhD – Curriculum Vitae

updated Feb 2020

Current Positions:

2016 –	Senior scientific associate (equivalent to associate professor). Group leader for mechanochemistry and in situ monitoring (2 students and 1 postdoc), Ruđer Bošković Institute, Zagreb, Croatia
2014 –	Centre of Excellence for Advanced Materials and Sensors, Croatia. Leading the unit for large-scale graphene preparation.

Previous Positions:

2012 – 2016	Scientific associate (equivalent to assistant professor), Ruđer Bošković Institute
2010 – 2012	Senior research and teaching assistant in chemistry, University of Zagreb
2005 – 2008	PhD student and teaching assistant, University of Zagreb.

Fellowships:

2008 – 2010	Postdoc with Prof. Robert Dinnebier, Max-Planck-Institute for Solid State Research, Stuttgart, Germany. Structure solution from powder diffraction data.

Education:

M.Sc. 2003.	University of Zagreb, Department of Chemistry
Ph.D. 2008.	University of Zagreb, Department of Chemistry. Title: "Kinetics and Mechanism of Solid-State Dimerisation of Nitrosobenzenes". Supervisor: Prof. Hrvoj Vančik.

Supervisions:

- PhD supervisions: Stipe Lukin (Oct 2016 - 30 September 2019), Magdalena Kralj (since May 2018).
- Postdoc supervision: Irena Sović (Sep 2017 - 2019), Stipe Lukin (Oct 2019 -)
- Supervisor to Mladen Borovina (2014 - 2015) on a proof-of-concept grant.
- Undergraduate research projects: with Igor Huskić (published in *Green Chem.* **14** (2012) 1597). With Nikola Cindro (*Croat. Chem. Acta* **86** (2013) 187.) With Tomislav Stolar and Stipe Lukin (*Cryst. Growth Des.* **16** (2016) 3262.) With Tomislav Stolar and Stipe Lukin awarded with the Rector's award of the University of Zagreb in 2014. Leonarda Vugrin (July 2019 -)
- M.Sc. supervisions: Vladimir Stilinović (published in *New. J. Chem.* **37** (2013) 619), Iva Džeba (*Croat. Chem. Acta* **87** (2014) 407), Tomislav Stolar (manuscript submitted), Stipe Lukin

Prizes and Awards:

2015-2019	Each year I have received an Award of the Director of the Ruđer Bošković Institute for a distinguished scientific contribution.
2015	The Annual State Award of the Republic of Croatia for exceptional achievements, the highest scientific merit in Croatia.
1998, 1999	The first prize and the second prize in National high-school competition in chemistry, Croatia

***Publications and citations*:** Total number of papers in peer-reviewed journals: **79**
Total number of citations: **2635** (from Google Scholar, accessed 31 Jan 2020)
H-index: **28**

Past Research Grants:

2017 – 2019	Principal investigator. Croatian science foundation – Support to research and development in the field of climate change. Funding: 280 kEUR. PI to the team of one senior scientist and two postdocs.
2017 – 2018	Principal investigator. Adris foundation. Funding: 30 kEUR
2016 – 2019	Collaborator. Starting grant, Croatian Science Foundation. Funding: 150 kEUR
2016 – 2019	Principal investigator. Several commercial contracts with PLIVA Croatia ltd. The largest pharmaceutical company in Croatia, part of TEVA.
2014 – 2015	Principal investigator. Croatian business and innovation agency, proof-of-concept grant. Funding: 40 kEUR. Led one employee on the grant.

Teaching:

2017 –	Lecturer. Graduate course on powder X-ray diffraction at the University of Zagreb

2005 – 2008 Teaching assistant – Department of Chemistry, University of Zagreb
2010 – 2012
2010 Course on crystallography for PhD students, MPI for Solid State Research, Stuttgart

Commisions of trust:

- Work package leader for in situ monitoring within the COST action CA18112 "Mechanochemistry for sustainable industry"
- Member of the scientific council of the Ruđer Bošković Institute (elected position) (2017-2019 and re-elected in 2019-)
- Croatian science foundation, Panel member for evaluation of proposals in chemistry (2017- 2019)
- Project reviewer for the Foundation for Polish Science (2016)
- Project reviewer for ERC Starting Grant (2018)
- Reviewer for the Annual Science State Award of the Republic of Croatia (2016-)
- Committee member at RBI and Univ. Zagreb for awarding degrees and positions
- Advisory board for the SCOPES project between Switzerland and South-Eastern Europe (2014)
- PhD thesis evaluator (Edislav Lekšić, 2013; Andreas Puškarić, defense planned for Feb 2020; Dajana Barišić, all at the University of Zagreb)

Editorial and organizational work:

- Organisation of training school on in situ monitoring for the COST action CA18112 (Feb 2020)
- Chair at the IUCr (International Union for Crystallography) meeting in Prague in 2020.
- Chair at the EPDIC (European powder diffraction conference) meeting in 2020.
- Scientific advisory board for INCOME2020 (International conference for mechanochemistry).
- Co-organiser of the Solid State Science and Research meeting in Zagreb in 2017 and 2019
- Guest editor with Robert E. Dinnebier of the special issue of Zeitschrift für Kristallographie (*Z. Krist.* 226 (2011) 869–962) dedicated to modern Rietveld Analysis.
- Organised and lectured a four-week workshop at the Ruđer Bošković Institute entitled "X-ray Diffraction on Powder Samples" Feb – March 2013.
- Chair at the 29th European Crystallographic Meeting, August 2015, Rovinj, Croatia
- Coordinator for the Department of Chemistry at the University fair (2007)
- Coauthor of two high-school chemistry textbooks (first editions in 2005 and 2008).

Manuscript Reviewer for:

J. Am. Chem. Soc., Chem. Commun., Chem. Eur. J., Cryst. Growth Des., Inorg. Chem., ChemCatChem, CrystEngComm, Eur. J. Inorg. Chem., Acta Chim. Slo., J. Mol. Struct., J. Alloys Comp., Molecules, J. Cryst. Growth, Org. Process Res. Dev., Solid State Sci., Z. Anorg. Allg. Chem.

Collaborations:

Mechanochemistry:	Prof. Tomislav Friščić (McGill University, Canada) Krunoslav Užarević (RBI, Croatia) Manda Ćurić (RBI, Croatia) Vjekoslav Štrukil (RBI, Croatia)
Synchrotron diffraction:	Dr. Marco di Michiel (ESRF, France) Prof. Simon Kimber (Univ. Bourgogne, France) Dr. Martin Etter (DESY, Germany)
Diffraction:	Prof. Robert Dinnebier (MPI for Solid State Research, Germany) Prof. Len MacGillivray (University of Iowa, USA) Dr. Dejan-Krešimir Bučar (UCL, UK)
Organic synthesis:	Dr. José G. Hernández (RWTH Aachen Univ.) Dr. Nikola Cindro (Univ. Zagreb) Prof. Evelina Colacino (Univ. Montpellier) Prof. Lars Borchardt (Univ. Bochum)
T**hermodynamics and kinetics**:	Francesco Delogu (Univ. Cagliari) Prof. Josip Požar (Univ. Zagreb, Croatia) Prof. Nenad Ferdelji (Univ. Zagreb, Croatia)
Theory:	Prof. Graeme M. Day (University of Southampton, UK) Dr. Ivor Lončarić (RBI, Croatia)

Publications in: *Angew. Chem. Int. Ed.* (6), *J. Am. Chem. Soc.* (2), *Nature Chem.* (1), *Nat. Commun.* (1), *Chem. Sci.* (2), *Chem. Eur. J.* (4), *Chem. Commun.* (6), *Green Chem.* (3), *Cryst. Growth Des.* (5), *J. Phys. Chem. Lett.* (1), *Nat. Protoc.* (1), *J. Org. Chem.* (4), *Inorg. Chem.* (2), *Organometallics* (2)

Selected publications:

1. S. Lukin, M. Tireli, T. Stolar, D. Barišić, M. V. Blanco, M. di Michiel, K. Užarević, **I. Halasz**, Isotope Labeling Reveals Fast Atomic and Molecular Exchange in Mechanochemical Milling Reactions, *J. Am. Chem Soc.* 141 (2019) 1212–1216. Citations: 6.
2. S. Lukin, M. Tireli, I. Lončarić, D. Barišić, P. Šket, D. Vrsaljko, M. di Michiel, J. Plavec, K. Užarević, **I. Halasz**, Mechanochemical carbon-carbon bond formation that proceeds *via* a cocrystals intermediate, *Chem Commun.* 54 (2018) 13216–13219. Citations: 6.
3. S. Lukin, I. Lončarić, M. Tireli, T. Stolar, M. V. Blanco, P. Lazić, K. Užarević, **I. Halasz**, Experimental and Theoretical Study of Selectivity in Mechanochemical Cocrystallization of Nicotinamide with Anthranillic and Salicylic Acid, *Cryst. Growth Des.* 18 (2018) 1539–1547. Citations: 3.
4. K. Užarević, N. Ferdelji, T. Mrla, P. A. Julien, B. Halasz, T. Friščić, **I. Halasz**, Enthalpy vs. friction: heat flow modelling of unexpected temperature profiles in mechanochemistry of metal–organic frameworks, *Chem. Sci.* 9 (2018) 2525–2532. Citations: 25.
5. S. Lukin, T. Stolar, M. Tireli, M. V. Blanco, D. Babić, T. Friščić, K. Užarević, **I. Halasz**, Tandem in Situ Monitoring for Quantitative Assessment of Mechanochemical Reactions Involving Structurally Unknown Phases, *Chem. Eur. J.* 23 (2017) 13941–13949. Citations: 32.
6. P. A. Julien, K. Užarević, A. D. Katsenic, S. A. J. Kimber, T. Wang, O. K. Farha, Y. Zhang, J. Casaban, L. S. Germann, M. Etter, R. E. Dinnebier, S. L. James, **I. Halasz**, T. Friščić, In Situ Monitoring and Mechanism of the Mechanochemical Formation of a Microporous MOF–74 Framework, *J. Am. Chem Soc.* 138 (2016) 2929–2932. Citations: 83.
7. A. D. Katsenis, A. Puškarić, V. Štrukil, C. Mottillo, P. A. Julien, K. Užarević, M.–H. Pham, T.–O. Do, S. A. J. Kimber, P. Lazić, O. Magdysyuk, R. E. Dinnebier, **I. Halasz**, T. Friščić, In situ X–ray diffraction monitoring of a mechanochemical reaction reveals a unique topology metal–organic framework, *Nat. Commun.* 6 (2015) 6662. Citations: 149.
8. D. Gracin, V. Štrukil, T. Friščić, **I. Halasz**, K. Užarević, Laboratory Real-Time and In Situ Monitoring of Mechanochemical Milling Reactions by Raman Spectroscopy, *Angew. Chem. Int. Ed.* 53 (2014) 6193–6197. Citations: 103.
9. T. Friščić, **I. Halasz**, P. J. Beldon, A. M. Belenguer, F. Adams,S. A. J. Kimber, V. Honkimäki, R. Dinnebier, Real-time and in situ monitoring of mechanochemical milling reactions, *Nature Chem.* 5 (2013) 66–73. Citations: 329.
10. **I. Halasz**, Single-crystal-to-single-crystal reactivity: gray, rather than black or white, *Cryst. Growth Des.* 10 (2010) 2817–2823. Citations: 78.

Invited lectures at international conferences, workshops or schools:

2018. Invited. Hungarian Academy of Science in Pecs.
2018. Invited. 3rd International Symposium on Materials for Energy Storage and Conversion, Belgrade
2018. Invited. European Powder Diffraction conference, Edinburgh, Scotland.
2017. Talk. INCOME2017 - International conference on mechanochemistry, Košice, Slovakia.
2017. Invited, Meeting of Croatian Chemists and Chemical Engineers, Poreč, Croatia
2015. Plenary, Slovenian Chemical Days. Ljubljana, Slovenia.
2014. Invited, Workshop LabEx CheMISyst, Montpellier, France.
2014. Invited, 170th Faraday Discussions Meeting, Montreal, Canada.
2013. Invited colloquium, Ruđer Bošković Institute, Zagreb, Croatia
2012. Invited, 11th International School and workshop on Macromolecular Structure of Biological and Non-biological Materials. Hurghada, Egypt.
2012. Talk,13th European Powder Diffraction Conference, Grenoble.
2010. Invited seminar, Department of Chemistry, University of Cambridge, UK.

2009. Invited seminar, Laboratory for Crystallography, ETH, Zürich, Switzerland.

Highlights:

My work has been selected four times to be published in the ESRF highlights: (1) the first paper introducing *in situ* monitoring using X-ray diffraction (paper No. 9 from selected papers), (2) then *in situ* monitoring of mechanochemical formation of pharmaceutically relevant cocrystals (not listed in selected papers above, *Angew. Chem. Int. Ed.* **2013**, *52*, 11538), (3) the paper describing the discovery of the *katsenite* metal-organic framework (paper No. 7) and (4) my recent work on atomic and molecular exchange in milling of isotope labelled solids (paper No. 1).

Highlights in Chemistry World, www.phys.org, Chemistry Today, Chemical & Engineering News etc. In Croatia, my work was covered in dozens of newspaper articles, TV reports and radio announcements. Around a hundred major web portals in Croatia and abroad covered my work.