

## **Curriculum vitae of Bálint Sztáray**

Born: June 28, 1974, Székesfehérvár, Hungary

### **Affiliation**

Department of Chemistry, University of the Pacific

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### **Degrees and Positions**

- **Director, Freshman Honors Program**, University of the Pacific, 2014–
- **Associate professor**, University of the Pacific, 2008–
- **Assistant professor**, Eötvös Loránd University, 2003–2008
- **Postdoctoral fellow**, University of North Carolina, 2001–2003  
*Mentor: Professor Tomas Baer*
- **Lecturer**, Eötvös Loránd University, 2001
- **Ph.D. in chemistry** (*summa cum laude*), Eötvös Loránd University, 2001  
*Thesis: Ionized states and dissociation of organometallics, adv: Prof. László Szepes*
- **M.S. in chemistry** (*first in class of '97*), Eötvös Loránd University, 1997

### **Research Field**

- **photoelectron-**

## **Recent Research Visits**

- **Combustion Research Facility, Sandia National Laboratories, CA**  
David Osborn, *Combustion Reactions Followed by Photoelectron Photoion Coincidence Spectroscopy (CRF-PEPICO)*, **2013–**
- **Háskóli Íslands, Iceland**  
Ágúst Kvaran, *iPEPICO data analysis*, **2011**

- **ACS Petroleum Research Fund, New Directions** – 2010  
*Energetics of the Ligand and Solvent Coordination of Catalytically Important Organometallic Complexes*, \$100k
- **Swiss Light Source, Beamtime Allocation** – 2008–2015  
*Imaging Photoelectron Photoion Coincidence Spectroscopy (many successful proposals)*
- **Hungarian National Scientific Research Fund (OTKA)** – 2008  
*international collaboration grant*  
*International Collaborative Photoionization Studies*
- **Hungarian National Scientific Research Fund (OTKA)** – 2005  
*young investigators award*  
*Thermochemistry of Organometallic Compounds Using Photoionization Techniques*
- **Magyary Fellowship** – 2001, 2003  
*postdoctoral research grant*
- **NSF – Hungarian Academy** with co-PI Professor Tomas Baer – 2001, 2004  
*International Collaborative Photoionization Study of Heats of Formation and Bond Energies of Organometallic Complexes*  
*received for two funding cycles*
- **National Research and Technology Office, Öveges grant** – 2006  
*involving undergraduate students in research*

## Teaching

- **University of the Pacific**
  - Analytical Chemistry Lecture and Lab
  - Instrumental Analytical Chemistry Lecture and Lab
  - General Chemistry Lecture
  - Introductory Chemistry Lecture
  - General Chemistry Labs
  - Introductory Chemistry Lab
- **Eötvös Loránd University**
  - General Chemistry Lecture (*in English*)
  - General Chemistry Lab (*in English and Hungarian*)
  - Inorganic Chemistry Lab
  - Elementary Chemical Calculations
  - Photoionization Techniques
- **University of North Carolina**
  - Quantum Chemistry

## Mentoring

- 5 Ph.D. theses (4 in Hungary, 1 at Pacific)
- 5 M.S. theses (1 at Pacific)
- two current Ph.D. and one current M.S. graduate students
- several undergraduate research theses at Hungarian undergraduate research conference, 2 *national first prizes*
- many undergraduate research students at the University of the Pacific

## Distinguished Awards

- **Magyary Postdoctoral Fellowship**  
*the most prestigious Hungarian postdoctoral fellowship*  
*typically 1 or 2 chemists receive it each year*  
*gives full-professor salary and research funds*
- **Pro Scientia Award**  
*highest national science award for university students*  
*received it twice, once as student, once as the advisor of a student*
- **National Award for Outstanding M.S. Thesis**  
*national award for university students*
- **Hungarian Undergraduate Research Conference** – National first prize  
*national research fair for undergraduate and M.S. students*
- **24th International Chemistry Olympics, Pittsburgh, PA – Gold Medalist**  
*competition in chemistry for high school students from more than 30 countries*  
*national team results: 1. China, 2. Hungary, 3. U.S.A.*

## Other Awards and Fellowships

- Undergraduate Research Conference of the Eötvös University – First Prize
- Szent-Györgyi Albert Gold Medal
- Excellent Student of the University Award
- Soros Fellowship

## **Publications of Bálint Sztáray**

**62.** Multiplexed Photoionization Mass Spectrometry Investigation of the  $O(^3P) + \text{Propyne}$  Reaction, John D. Savee, Sampada Borkar, Oliver Welz, Bálint Sztáray, Craig A. Taatjes, and David L. Osborn\*, *J. Phys. Chem. A*, 119 (2015) 7388–7403

**61.** Barrierless Proton Transfer Across Weak  $CH\cdots O$  Hydrogen Bonds in Dimethyl Ether Dimer, Bruce Yoder,\* Ksenia Bravaya, Andras Bodi, Adam H. C. West, Bálint Sztáray, and Ruth Signorell, *J. Chem. Phys.*, 142 (2015) 114303

**60.** Threshold Photoelectron Spectrum of the Benzyl Radical, John D. Savee, Judit Zádor, Patrick Hemberger, Bálint Sztáray, Andras Bodi, David L. Osborn,\* *Mol. Phys.*, (2015) DOI: 10.1080/00268976.2015.1021398

**59.** Dissociative Photoionization of Quinoline and Isoquinoline, Jordy Bouwman,\* Bálint Sztáray, Jos Oomens, Patrick Hemberger, and Andras Bodi, *J. Phys. Chem. A*, 119 (2015) 1127–1136

**58.** Iodine Atom Loss Kinetics in Internal Energy Selected 1-Iodoalkane Cations by Imaging Photoelectron Photoion Coincidence Spectroscopy, Tyson G. Rowland, Sampada Borkar, Andras Bodi, and Bálint Sztáray,\* *Int. J. Mass Spectrom.*, 378 (2015) 134–142

**57.** Energetics and Dissociation Pathways of Dimethyl Disulfide and Dimethyl Diselenide Using Photoelectron Photoion Coincidence Spectroscopy, Sampada Borkar, Bálint Sztáray,\* Andras Bodi, and *J. Electron Spectrosc.*, 196 (2014) 165–172

**56.** On the Protonation of Water, Andras Bodi, József Csontos, Mihály K

- 51.** Tunneling in H Loss From Energy Selected Ethanol Ions, Andras Bodi, M. Daniel Brannock, Bálint Sztáray, and Tomas Baer\*, *Physical Chemistry Chemical Physics*, 14 (2012) 16047–16050
- 50.** On the Dissociation of the Naphthalene Radical Cation: New iPEPICO and Tandem Mass Spectrometry Results, Brandi West, Christine Joblin, Valerie Blanchet, Andras Bodi, Bálint Sztáray, and Paul M. Mayer, *Journal of Physical Chemistry A*, 116 (2012) 10999–11007
- 49.** Dissociating  $C_3H_5Br^+$  Ions: Almost All Roads Lead to the Allyl Cation, Sampada Borkar, Bálint Sztáray,\* and Andras Bodi,\* *International Journal of Mass Spectrometry*, 330–332 (2012) 100–108
- 48.** A New Double Imaging Velocity Focusing Coincidence Experiment:  $i^2$ PEPICO, Andras Bodi, Patrick Hemberger, Thomas Gerber, and Bálint Sztáray, *Review of Scientific Instruments*, 83 (2012) 083105
- 47.** Metal–Carbonyl Bond Energies in Phosphine Analogue Complexes of  $Co(CO)_3NO$  by Photoelectron Photoion Coincidence Spectroscopy, Csaba István Pongor, László Szepes, Rosemarie Basi, Andras Bodi, and Bálint Sztáray,\* *Organometallics*, 31 (2012) 3620–3627
- 46.** Bonding in a borylene complex investigated by photoionization and dissociative photoionization, Kathrin H. Fischer, Michael Schneider, Ingo Fischer, Bernd Pfaffinger, Holger Braunschweig, Bálint Sztáray, and Andras Bodi, *Chemistry a European Journal*, 18 (2012) 4533–4540
- 45.** Dissociation dynamics of fluorinated ethene cations: from time bombs on a molecular level to double-regime dissociators, Jonelle Harvey, Andras Bodi, Richard Tuckett, Balint Sztáray, *Physical Chemistry Chemical Physics*, 14 (2012) 3935

Bodi, Thomas Gerber and Bálint Sztáray\*, Journal of Physical Chemistry A, 114 (2010) 9115–9123

**39.** Self-consistent Heats of Formation for the Ethyl Cation, Ethyl Bromide and Ethyl Iodide from

**29. Da**



- 18.** Dissociative Photoionization and Thermochemistry of Dihalomethane Compounds Studied by Threshold Photoelectron Photoion Coincidence Spectroscopy, A. F. Lago, James P. Kercher, Andras Bodi, Bálint Sztáray, B. Miller, D. Wurzelmann, and Tomas Baer\*, *Journal of Physical Chemistry A*, 109 (2005) 1802-1809
- 17.** On the Parallel Mechanism of the Dissociation of Energy-Selected  $\text{P}(\text{CH}_3)_3^+$  Ions, Andras Bodi, James P. Kercher, Tomas Baer\*, and Bálint Sztáray, *Journal of Physical Chemistry B*, 109 (2005) 8393-8399
- 16.** Heats of Formation of the Propionyl Ion and Radical and 2,3-Pentanedione by Threshold Photoelectron Photoion Coincidence Spectroscopy, James P. Kercher, Elizabeth A. Fogleman, Hideya Koizumi, Bálint Sztáray, and Tomas Baer\*, *Journal of Physical Chemistry A*, 109 (2005) 939-946
- 15.** The statistical theory for unimolecular decay of organic and organometallic ions, Tomas Baer and Bálint Sztáray, volume 5, *Encyclopedia of Mass Spectrometry*, Elsevier, 2004
- 14.** Effect of Phosphine Substitution on the Electronic Structure of Cobalt Tricarbonyl Nitrosyl, Zsolt Gengeliczki, Andras Bodi, and Bálint Sztáray\*, *Journal of Physical Chemistry A*, 108 (2004) 9957-9961
- 13.** Electron Impact Ionization in Helium Nanodroplets: Controlling Fragmentation by Active Cooling of Molecular Ions, William K. Lewis, Brian E. Applegate, Judit Sztáray, Bálint Sztáray, Tomas Baer, Raymond J. Bemish, and Roger E. Miller\*, *Journal of the American Chemical Society*, 126 (2004) 11283-11292
- 12.** The Heats of Formation of the Acetyl radical and Ion obtained by Threshold Photoelectron Photoion Coincidence, Elizabeth A. Fogleman, Hideya Koizumi, James P. Kercher, Bálint Sztáray, and Tomas Baer\*, *Journal of Physical Chemistry A*, 108 (2004) 5288-5294
- 11.** Neutral Cobalt-Carbonyl Bond Energy by Combined Threshold Photoelectron Photoion Coincidence and He(I) Photoelectron Spectroscopy, Bálint Sztáray, László Szepes and Tomas Baer\*, *Journal of Physical Chemistry A*, 107 (2003) 9486-9490
- 10.** The suppression of hot electrons in threshold photoelectron photoion coincidence spectroscopy using velocity focusing optics, Bálint Sztáray and Tomas Baer\*, *Review of Scientific Instruments* 74 (2003) 3763
- 9.** Consecutive and Parallel Dissociation of Energy Selected  $\text{Co}(\text{CO})_3\text{NO}^+$

7. The dissociation kinetics of energy selected  $\text{CpMn}(\text{CO})_3^+$  ions studied by threshold photoelectron-photoion coincidence spectroscopy, Yue Li, Bálint Sztáray, Tomas Baer\*, Journal of the American Chemical Society, 123 (2001) 9388
6. The dissociation dynamics and thermochemistry of energy selected  $\text{CpCo}(\text{CO})_2^+$  ions, Bálint Sztáray, Tomas Baer\*, Journal of the American Chemical Society, 122 (2000) 9219
5. A photoelectron and photoion coincidence study of the  $\text{ICH}_2\text{CN}$  dissociation: Thermochemistry of  $\cdot\text{CH}_2\text{CN}$ ,  $^+\text{CH}_2\text{CN}$ , and  $\text{ICH}_2\text{CN}$ , Rick D. Laflour, Bálint Sztáray, Tomas Baer\*, Journal of Physical Chemistry A, 104 (7) (2000) 1450
4. The geometry and electronic structure of bis(cyclopentadienyl)-bis(tetrahydridoborato)-zirconium(IV), Bálint Sztáray, Edina Rosta, Zsolt Böcskey, László Szepes\*, Journal of Organometallic Chemistry, 582 (1999) 267
3. Photoelectron spectroscopy of mono and binuclear iron and chromium cyclooctatetraene complexes, Gábor Vass, Bálin(,) 4 5d 2 (t) 6 (r) 4 (o) 16 (u)2(1 (as) 1 6 (t) 0.0081 Tc 45 0 0(o)8)T6 (48793 Tc 491