Branko Ruscic

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Professional Experience

- **1988-present**. Scientist/Senior Scientist, Chemical Sciences and Engineering Division, Argonne National Laboratory.
- **1985-1987**. Visiting Scientist (3 months per year), Chemistry (1987) and Physics (1985, 1986) Divisions, Argonne National Laboratory.
- **1984-1988.** Scientist, Department of Physical Chemistry, "Rugjer Boskovic" Institute, Zagreb.
- **1981-1983**. Postdoctoral Appointee, Physics Division, Argonne National Laboratory.
- **1980-1981**. Research Associate, Department of Physical Chemistry, "Rugjer Boskovic" Institute, Zagreb.

Education

- Ph.D., Chemistry (dr. rer. nat.) University of Zagreb, Croatia, 1979. (Ph. D. Thesis advisor: Prof. Dr. Leo Klasinc)
- B. S., Chemistry (dipl. eng.), University of Zagreb, Croatia, 1975. (B. S. Thesis advisor: Prof. Dr. Leo Klasinc)

Awards

- University of Chicago Distinguished Performance Award (2006)
- Sandia National Laboratories Meritorious Achievement Award (2005)
- Argonne Pacesetter Award (2003)
- Fellow, World Innovation Foundation (since 2002), International Scientist of the Year (awarded by Internat. Biograph. Centre, Cambridge, England, 2002)
- One of the top cited Croatian–born scientists (1993–present)
- Chancellor (1984–1986) and Presidential Board Member (1986–1988), Croatian Chem. Soc.
- Federal Award of Former Yugoslavia (best emerging scientist in the country, 1978)
- Krka Award (annual award for outstanding research, pharmaceutical company "Krka," Slovenia, 1978)

- Rector's Award, University of Zagreb (annual award bestowed on the best student, 1972)
- Listed in "2000 Outstanding Scientists of the 21st Century", "Dictionary of Internat. Biography", "100 (Past and Present) Chemists of Croatia", "Who's Who in Croatia", "Marquis Who's Who in Science and Engineering", and "Marquis Who's Who in the World".

Career Activities & Highlights

- Areas of Research and Expertise
  - Study of radicals and other transient species by photoionization spectroscopy/photoelectron spectroscopy and related experimental techniques, application of theoretical methods to thermochemistry and spectroscopy, application of thermochemical networks, development of the concept of Active Tables.
- Professional Organizations
  - American Chemical Society
  - International Union of Pure and Applied Chemistry
- Professional Activities
  - Chairman, IUPAC Task Group on Thermodynamic Properties of Selected Free Radicals and Critical Intermediates (2004–present, member 2001–2003)
  - Co–PI, Collaboratory for Multi–scale Chemical Science, (SciDAC Nat'l. Collaboratory) (2001–2006)
  - Member, Chemical Dynamics Beamline Participating Research Team, Advanced Light Source, Lawrence Berkeley Laboratory (1988–present)
- Outside Collaborations
  - T. Baer (UNC Chapel Hill)
  - T. Bérces (Hungarian Acad. Sci.)
  - J. E. Boggs (UT Austin)
  - A. Burcat (Technion)
  - L. Butler (U. Chicago)
  - A. G. Császár (Eötvös U. Budapest)
  - J. Demaison (U. de Lille)
  - D. A. Dixon (U. Alabama)
  - M. Frenklach (UC Berkeley)
  - W. H. Green (MIT)
  - J. Hougen (NIST)
  - J. M. L. Martin (Weizmann)
  - C.–Y. Ng (UC Davis)
  - Kirk A. Peterson (WSU Richland)
  - L. A. Rahn (Sandia)
  - M. J. Rossi (EPF Lausanne)
  - K. Ruedenberg (U. Iowa)
  - D. W. Schwenke (NASA Ames)

- J. F. Stanton (UT Austin)
- P. R. Westmoreland (U. Mass. Amherst)
- T. Turányi (Eötvös U. Budapest)

Publications

A. Karton, B. Ruscic, and J. M. L. Martin, "Benchmark Atomization Energy of Ethane: Importance of Accurate Zero–Point Vibrational Energies and Diagonal Born–Oppenheimer Corrections for a 'Simple' Organic Molecule," *Journal of Molecular Structure*, (Theochem), 811 (1–3), 345–353 (2007).

X. Zhang, A. T. Maccarone, M. R. Nimlos, S. Kato, V. M. Bierbaum, B. K. Carpenter, G. B. Ellison, B. Ruscic, A. C. Simmonett, W. D. Allen, and H. F. Schaefer III, "Unimolecular Thermal Fragmentation of *Ortho*–Benzyne," *The Journal of Chemical Physics*, 126 (4), 044312/1–044312/20 (2007).

A. W. Jasper, S. J. Klippenstein, L. B. Harding, and B. Ruscic, "Kinetics of the Reaction of Methyl Radical with Hydroxyl Radical and Methanol Decomposition," *The Journal of Physical Chemistry*, A 111 (19), 3932–3950 (2007).

A. Karton, E. Rabinovich, J. M. L. Martin, and B. Ruscic, "W4 Theory for Computational Thermochemistry: In Pursuit of Confident Sub–Kj/Mol Predictions," *The Journal of Chemical Physics*, 125 (14), 144108/1–144108/17 (2006).

B. Ruscic, R. E. Pinzon, M. L. Morton, N. K. Srinivasan, M.–C. Su, J. W. Sutherland, and J. V. Michael, "Active Thermochemical Tables: Accurate Enthalpy of Formation of Hydroperoxyl Radical, HO_2," *The Journal of Physical Chemistry*, A 110 (21), 6592–6601 (2006).

X. Tang, Y. Hou, C. Y. Ng, and B. Ruscic, "Pulsed Field–Ionization Photoelectron–Photoion Coincidence Study of the Process $N_2 + h\nu \rightarrow N^+ + N + e^-$: Bond Dissociation Energies of N_2 AND N_2^+," *The Journal of Chemical Physics*, 123 (7), 074330/1–074330/7 (2005).

A. Burcat and B. Ruscic, "Third Millennium Ideal Gas and Condensed Phase Thermochemical Database for Combustion with Updates from Active Thermochem. Tables," J*oint Report*: ANL–05/20, Argonne National Laboratory, Argonne, Illinois, USA, and TAE 960, Technion – Israel Institute of Technology, Haifa, Israel (2005).