

Brief CV:

WINTHROP W. SMITH, Research Prof. of Physics and Prof. Emeritus, Univ. of Connecticut

a) PROFESSIONAL PREPARATION:

Undergraduate: Amherst College, Physics major, B.A. (magna cum laude), 1958.

Graduate: Massachusetts Institute of Technology (MIT), Ph.D. Physics major, minor in Mathematics, 1963.

Postdoctoral: NAS-NRC Fellow, JILA [Joint Institute for Laboratory Astrophysics, NBS (NIST)], Boulder, Colorado (AMO Physics, Solar Physics and Laboratory Astrophysics), 1963-65.

b) APPOINTMENTS:

2009-present: Research Professor and Prof. Emeritus, Physics, University of Connecticut.

1975-2009: Professor of Physics, University of Connecticut, Storrs, CT 06269-3046.

1976-present: Member, Institute of Materials Science, University of Connecticut.

2005 (Spring) Visiting Scientist, Harvard-Smithsonian Center for Astrophysics (ITAMP) (sabbatical).

1997-1998 Visiting Professor, MIT, Physics/RLE, AMO Physics (Pritchard group), (sabbatical).

1990-92 Visiting Scientist, Max-Planck-Institute f. Quantenoptik (MPQ), Garching bei Muenchen, Germany; and Guest Professor, Institute of Physics, University of Aarhus, Denmark (sabbatical).

1983-84 Program Officer, AMO Physics, National Science Foundation (on leave from Univ. of CT).

1982-83 Visiting Scientist, Molecular Physics Laboratory, SRI International, Menlo Park, CA;

Concurrently, Visiting Scholar, Physics Dept., Stanford University (sabbatical).

1978-90 Research Participant (LAMPF), Los Alamos Nat. Laboratory, Consultant, 1985-90 (concurrent).

1975-76 Visiting Fellow, JILA, Univ. of Colorado (sabbatical).

1979 Physicist (Summer), Lawrence Livermore National Laboratory.

1969-75 Research Participant, Oak Ridge Assoc. Universities, Oak Ridge Nat. Laboratory.

1969-74 Associate Professor Physics, University of Connecticut.

1965-1969 Instructor to Assistant Prof., Physics Dept. /Columbia Radiation Lab., Columbia University.

c) Honors and Distinctions:

Fellow, American Physical Society, 1975-

Alexander von Humboldt Senior Scientist Research Award (Germany) 1990-92.

Elected member, Connecticut Academy of Science and Engineering, 2006-

Phi Beta Kappa

Sigma Xi

d) PUBLICATIONS (Selected. Total, refereed: 100+):

1. R. Bluemel, J.E. Wells, D.S. Goodman, J.M. Kwolek, and W.W. Smith. Universal nonmonotonic structure in the saturation curves of magneto-optical-trap-loaded Na⁺ ions stored in an ion-neutral hybrid trap: Prediction and observation. *Phys. Rev. A* **92**, 063402 (2015); arXiv: 1507.0473v1 [physics.atom-ph].

2. D.S. Goodman, J.E. Wells, J.M. Kwolek, R. Bluemel, F.A. Narducci, and W.W. Smith. Measurement of the low-energy Na⁺ - Na total collision rate in an ion-neutral hybrid trap. *Phys. Rev. A* **91**, 012709, Jan. 2015. arXiv: 1412.5141v1 [physics.atom-ph].

3. W.W. Smith, D.S. Goodman, I. Sivarajah, J.E. Wells, S. Banerjee, R. Côté, H.H. Michels, J.A. Montgomery, Jr., F.A. Narducci. "Experiments with an ion-neutral hybrid trap: cold charge-exchange collisions", *Appl. Phys. B* **114**(1-2), 75-80 (2014); DOI 10.1007/s00340-013-5672-2.

4. I. Sivarajah, D.S. Goodman, J.E. Wells, F.A. Narducci, and W.W. Smith. "Evidence of sympathetic cooling of Na⁺ ions by a Na magneto-optical trap in a hybrid trap", Phys. Rev. A **86**, 063419 (2012).
5. D.S. Goodman, I. Sivarajah, J.E. Wells, F.A. Narducci, and W.W. Smith. "Ion-neutral-atom sympathetic cooling in a hybrid linear rf Paul and magneto-optical trap", Phys. Rev. A **86**, 033408 (2012).
6. Winthrop W. Smith, Oleg P. Makarov and Jian Lin, "Cold Ion-Neutral Collisions in a Hybrid Trap", Journal of Modern Optics (Taylor and Francis, Ltd.), **52**, 2253-2260 (2005).
7. K.A. Miller, W.W. Smith, T. Ehrenreich, Q.C. Kessel, E. Pollack, C. Verzani, V.A. Kharchenko, A. Chutjian, J.A. Lozano, N. Djuric and S.J. Smith. "X-ray Emissions from Collisions of O₆₊ Ions With CO", Astrophysical Journal **742**, 130 (2011).
8. Robin Côté, Phillip L. Gould, Michael Rozman and Winthrop W. Smith, eds. Pushing the Frontiers of Atomic Physics, Proceedings of the XXI Intl. Conf. on Atomic Physics, World Scientific, NJ (2009), 371pp. ISBN13 978-981-4271-99-8.
9. Oleg P. Makarov, R. Côté, H. Michels, and W. W. Smith. "Radiative charge transfer lifetime of the excited state of (NaCa)⁺", Phys. Rev. A **67**, 042705 (2003).
10. W.W. Smith, E. Babenko, R. Cote' and H.H. Michels. 2003. On the collisional cooling of trapped atomic and molecular ions by ultracold atoms: Ca⁺ + Na and Na₂^{+(v*,J*)} + Na, invited talk at QO VIII, University of Rochester, June 13-16, 2001, in Coherence and Quantum Optics: VIII Proceedings of the 8th Rochester Conference, N. Bigelow, et al. editors, Plenum Press/ Kluwer, NY, 623-624 (2003).
11. S. Gupta, D.A. Kokorowski, R.A. Rubenstein and W.W. Smith. "Longitudinal Interferometry with atomic beams", Chapter in Advances in Atomic, Molecular, and Optical Physics. **46**, 243-275 (2001), B. Bederson and H. Walther, editors, Academic Press, N.Y.

d) Synergistic Activities and Service:

Sec.-Treasurer APS Div. of Laser Sci. (DLS) 1996-1999, Chair 2002-2003; Sec.-Treas. APS DAMOP 1987-1990. Member, Panel for Physics, NAS/NRC Board of Assessment of Programs for NIST 1997-1999; Executive Committee, New England Section, APS 2007-2014; elected Vice Chair 2012, Chair 2013. Member, International Advisory Committee, ICAP Atomic Physics Conferences (2008-date).

e) Collaborators and Other Affiliations

- **Collaborators** (recent): D.S. Goodman (Wentworth Inst.), S. Banerjee (Intel, Inc.), R. Bluemel (Wesleyan U.), A. Chutjian (NASA/Caltech Jet Propulsion Lab.-JPL), R. Côté (UConn), N. Djuric (JPL), T. Ehrenreich (Leidos, Inc.), Q.C. Kessel (UConn), J.A. Montgomery, Jr. (UConn), H.H. Michels (UConn), F.A. Narducci (Naval Air Systems, MD), I. Sivarajah (Griffith U., Australia), S. Hossein (JPL), V. Kharchenko (UConn), J.A. Lozano (Pasadena), K.A. Miller (Columbia U.-Astrophysics), S.J. Smith (JPL), A. Tussing (U. Heidelberg), C. Verzani (U. Wisconsin – Stephens Pt.), J.E. Wells (UConn), J. Kwolek (UConn).
- **Graduate Advisors and Postdoctoral Sponsors.** Francis Bitter (MIT, Ph.D. Thesis Advisor, deceased), H.H. Stroke (NYU, member of thesis committee). Postdoctoral advisors: Peter L. Bender (JILA/NIST, retired) and Lewis M. Branscomb (JILA/NIST, Univ. of Colorado; later at Harvard University, KSG, retired).
- **Thesis Advisor and Postgraduate-Scholar Sponsor** (last 5 years-all UConn). Douglas Goodman (Ph.D. 2015, major advisor), Bethany Adams (Ph.D. candidate, advisor), Jennifer Carini (Ph.D. 2015, associate advisor), R. Carollo (Ph.D. 2015, associate advisor), Zhe Chen

(Ph.D. candidate, associate advisor). Philip Gee (M.S., associate advisor), Julian Klinner (M.S., associate advisor), Jonathan Kwolek (Ph.D. candidate, major advisor), Dong-Ik Lee (Ph.D. 2005, associate advisor), Kenneth Miller (Ph.D. 2008, associate advisor), Angel Nikolov (Ph.D., associate advisor), Marin Pichler (Ph.D., associate advisor), Zoran Pavlovic (Ph.D. 2011, associate advisor), Ila Sivarajah, (Ph.D. 2012, major advisor), James E. Wells (Ph.D. candidate, major advisor). L. Zhao (Ph.D. candidate, associate advisor). Total number of graduate student advisory committees last 5 years: ~24.