

Arthur J. Epstein

Professional Preparation

Polytechnic Institute of Brooklyn	Physics	B.S. (cum laude), 1966
University of Pennsylvania	Physics	M.S., 1967
University of Pennsylvania	Physics	Ph.D., 1971

Appointments

2003-present: Director, OSU Institute for Magnetic and Electronic Polymers

2003-present: OSU Center for Materials Research Scholar

1997-present: Distinguished University Professor, The Ohio State University, Department of Physics and Department of Chemistry

1997-present: Adjunct Professor of Chemistry, University of Utah, Salt Lake City, Utah

1983-1987: Adjunct Professor of Physics, University of Florida, Gainesville, Florida

1985-1997: Professor of Physics and Professor of Chemistry, The Ohio State University, Department of Physics and Department of Chemistry

1972-1985: Principal Scientist, Xerox Webster Research Center, Webster, NY

1971-1972: Member, Technical Staff, The MITRE Corp., McLean, VA,

Selected Awards and Distinctions

Fellow, American Physical Society, 1981

"Hottest" Paper in Chemistry, Institute of Scientific Information (ISI) , Jan.-Feb., 1990

Distinguished Scholar, The Ohio State University, 1991

Finalist, Outstanding Teaching Award, The Ohio State University, 1994

Visiting Lecturer of the Chemistry Research Promotion Center, Taipei, Taiwan, ROC, January 2000

Technology Partnership Award, The Ohio State University, 2000

Guest Professor, November 2001. Hosted by University of Tokyo, Wasada University, Tokyo Metropolitan University, Kyoto University and Osaka University

University Distinguished Lecturer 2001-2002, The Ohio State University.

Watkins Visiting Professor, Wichita State University, March 4-6, 2002.

Fellow, American Association for the Advancement of Science, 2002.

Highly Cited Researcher in Physics, ISI, 2002

William Fowler Award for Distinguished Work in Physics, Ohio Section American Phys. Soc., 2003

Plenary Lecturer, Int. Conf. Sci. &Tech. Synth. Metals, Wollongong, AU., Jun 2004; Dublin, Ireland, Jul 2006.

James C. McGroddy Prize for New Materials, American Physical Society, 2007

TEDx Columbus Speaker, Columbus, Ohio, October 20, 2009.

Selected Professional and Synergistic Activities

Organizer/Co-Organizer/Instructor of Tutorials or Focus Sessions at 2001/2003/2005 American Physical Society March Meetings; Workshop Co-Organizer at 2005 Materials Res. Soc. Meeting.

Editor-in-Chief from June 2000 to present. Co-Organizer, International Conferences on Synthetic Metals (ICSMs) 1977, '81, '96 and was co-editor for those years' ICSM proceedings.

Honorary Professor, Institute of Chemistry of the Chinese Academy of Sciences, Beijing, PRC, 2002

Honorary Professor, Jilin University, Changchun, PRC, 2002

Councilor, American Physical Society's Division of Condensed Matter Physics (2008-2012)

Teaching/Education: Recruiting, Mentoring, Teaching

Recruit and educate underrepresented groups in science, technology, engineering and mathematics, including Ph.D. student Timi Adetunji, and REU students Edwin Lee (LSU), and Chimere Brown (Capital U.) and Malik Ba (faculty, Columbus State College), all African-American and U.S. citizens, and Eric Zamora (REU student

Hispanic U.S. citizen). Mentor Physics and Chemistry undergraduates in NSF Research Experiences for Undergraduates (REU) Program; Mentoring Physics and Chemistry undergraduates' Bachelor's theses in interdisciplinary electronic polymers; Mentoring Ph.D. students in various Multidisciplinary graduate programs (Chemistry, Chemical Eng. and Biomedical Eng.) in addition to Physics. Teach unique courses "Electronic Properties of Novel Materials" in OSU Chemistry Dept., "Physics of Low-Dimensional Materials" in OSU Physics Dept. and "Introduction to Organic-Based Electronic and Magnetic Materials and Devices" in OSU Physics and Chemistry Depts.

Former Graduate and Postgraduate advisees: 48 Graduate and 20 Postgraduate advisees

Selected Publications (>675 publications and >35 patents); H-Index: 77

S. Chittipeddi, K.R. Cromack, J.S. Miller, and A.J. Epstein, *Ferromagnetism in Molecular Decamethylferrocenium Tetracyanoethenide (DMeFc) (TCNE)*, **Phys. Rev. Lett.** **58**, 2695-2698 (1987).

R.S. Kohlman, A. Zibold, D.B. Tanner, G.G. Ihas, Y.G. Min, A.G. MacDiarmid, and A.J. Epstein, *Limits for Metallic Conductivity in Conducting Polymers*, **Physical Review Letters** **78**, 3915-3918 (1997).

Y. Z. Wang and A.J. Epstein, *Interface Control of Light-emitting Devices Based on Pyridine-containing Conjugated Polymers*, **Accounts of Chemical Research** **32**, 217-224 (1999).

V.N. Prigodin and A.J. Epstein, *Resonance Quantum Transport in Doped Conducting Polymers: The Improbable Becomes Possible*, **Europhysics Letters** **60**, 750-756 (2002).

F.C. Delucia, Jr., T.L. Gustafson, Y.Z. Wang, D.K. Wang, and A.J. Epstein, *Exciplex Dynamics and Emission from Nonbonding Energy Levels in Electronic Polymer Blends and Bilayers*, **Phys. Rev. B** **65**, 235204 (2002).

V.N. Prigodin, N.P. Raju, K.I. Pokhodnya, J.S. Miller, and A.J. Epstein, *Spin-driven Resistance in Organic-Based Magnetic Semiconductor $V[TCNE]_x$* , **Advanced Materials** **14**, 1230-1233 (2002).

V.N. Prigodin, J.D. Bergeson, D.M. Lincoln, and A.J. Epstein, *Anomalous Magnetoresistance in Organic Semiconductors*, **Syn. Met.** **156**, 757 (2006).

J.-W. Yoo, R.S. Edelstein, D.M. Lincoln, N. P. Raju, C. Xia, K.I. Pokhodnya, J.S. Miller, and A. J. Epstein, *Multiple Photonic Responses in Films of Organic Magnetic Semiconductor $V(TCNE)_2$* , **Physical Review Letters** **97**, 247205-1/4 (2006).

N.-R. Chiou, C. Lu, L.J. Lee, and A.J. Epstein, *Aligned Polyaniline Nanofibers: Superhydrophilicity, Superhydrophobicity and Applications*, **Nature Nanotechnology** **2**, 354-357 (2007).

V.N. Prigodin and A.J. Epstein, Comment on "Voltage-Induced Metal-Insulator Transition in Polythiophene Field-Effect Transistors," **Physical Review Letters** **98**, 259703 (2007).

A.J. Epstein, *Transport and Field Effects in Doped Conducting Polymers* in **Handbook of Conducting Polymers, Third Edition**, edited by T.A. Skotheim and J.R. Reynolds (CRC Press Taylor & Francis Group), Chapter 15, pp. 15.3- 15. 75 (2007).

J.W. Yoo, R.Shima Edelstein, D.M. Lincoln, N.P. Raju, and A.J. Epstein, *Photoinduced Magnetism and Random Magnetic Anisotropy in Organic-Based Magnetic Semiconductor $V(TCNE)_x$ Films, for $x \sim 2$* , **Phys. Rev. Lett.** **99**, 157204-1/4 (2007).

N.-R. Chiou, L.J. Lee, and A.J. Epstein, *Porous Membrane Controlled Polymerization of Nanofibers of Polyaniline and Its Derivatives*, **Journal of Materials Chemistry** **18**, 2085-2089 (2008).

J.B. Kortright, D.M. Lincoln, R. Shima Edelstein, and A.J. Epstein, *Bonding, Backbonding, and Spin-polarized Molecular Orbitals: Basis for Magnetism and Semiconducting Transport in $V[TCNE]_{x-2}$* , **Physical Review Letters** **100**, 257204/1-4 (2008).

J.D. Bergeson, S.J. Etzkorn, M.B. Murphey, L. Qu, J. Yang, L. Dai, A.J. Epstein, *Iron Nanoparticle Driven Spin-valve Behavior in Aligned Carbon Nanotube Arrays*, **Appl. Phys. Lett.** **93**, 172505/1-3 (2008).

J.-W. Yoo, H.W. Jang, V.N. Prigodin, C. Kao, C.B. Eom, and A.J. Epstein, *Giant Magnetoresistance in Ferromagnet/Organic Semiconductor/Ferromagnet Heterojunctions*, **Phys. Rev. B**, 205207/1-9 (2009).

J.-W. Yoo, V.N. Prigodin, A.J. Epstein, *Spintronic Applications of Organic* in **Organic Spintronics**, edited by Z.V.Vardeny (Taylor & Francis Group), Chapter XX, xxx-xxx (2010)

L.N. Nemzer, A. Schwartz, and A.J. Epstein, *Enzyme Entrapment in Reprecipitated Polyaniline Nano- and Microparticles*, submitted to Nature Materials.

J.-W. Yoo, C.-Y. Chen, H.W. Jang, C.W. Bark, V.N. Prigodin, C.B. Eom, and A.J. Epstein, *Room Temperature Organic-based Spin Polarizer*, submitted to Science