

CHERIE R. KAGAN

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PROFESSIONAL PREPARATION

University of Pennsylvania	Materials Science and Engineering	BSE 1991
University of Pennsylvania	Mathematics	BA 1991
Massachusetts Institute of Technology	Materials Science and Engineering	PhD 1996
Bell Laboratories, Lucent Technologies	Postdoctoral Fellow	1996-1998
IBM T. J. Watson Research Center	Postdoctoral Fellow	1998-1999

APPOINTMENTS

2007- present	Associate Professor of Electrical and Systems Engineering
2007-present	Associate Professor of Materials Science and Engineering
2007-present	Director, University of Pennsylvania Nanofabrication Facility
2004-2006	Manager, Molecular Assemblies and Devices Group, IBM T. J. Watson Research Center
2000-2004	Research Staff Member, IBM T. J. Watson Research Center

SELECTED HONORS AND AWARDS

2009 Stanford University Distinguished Women in Science Colloquium, April, 2009
2007 Natl. Acad. Sci. and Japan. Soc. for the Promotion of Science: 10th Annual Joint Japanese-American Frontiers of Science Symposium, Kavli Fellowship, Japan
2005 IBM Outstanding Technical Achievement Award, December, 2005
2005 Pittsburgh Conference Lecturer, Spring 2005
2002 Top 12 Young Women at the Forefront of Chem., C&EN News, July, 2002
2002 APS Featured in Physics in Your Future, booklet aimed at high school and college women
2000 MIT Technology Review TR10, Jan/Feb 2000 Innovator for Flexible Transistors in the Top 10 Emerging Technologies

SELECTED PUBLICATIONS RELATED TO THIS PROPOSAL

Y. S. Cohen, S. Xiao, C. Nuckolls, and C. R. Kagan, "Enforced One-Dimensional Photoconductivity in Core-Cladding Hexabenzocorenes", *Nano Lett.* **6**: 2838 (2006).
G. S. Tulevski, A. Afzali, T. O. Graham, C. Nuckolls, and C. R. Kagan, "Device Scaling in Sub-100 nm Pentacene FETs", *Appl. Phys. Lett.* **89**: #183101 (2006).
G. S. Tulevski, Q. Miao, A. Afzali, T. O. Graham, C. R. Kagan, and C. Nuckolls, "Chemical Complementarity in the Contacts for Nanoscale Organic Field-Effect Transistors", *J. Am. Chem. Soc.* **128**: 1788 (2006).
N. D. Lang and C. R. Kagan, "The Role of Chemical Contacts in Molecular Conductance", *Nano Lett.* **6**: 2955 (2006).
G. S. Tulevski, Q. Miao, M. Fukuto, R. Abram, B. Ocko, R. Pindak, C. R. Kagan, and C. Nuckolls, "Direct Assembly of Organic Semiconductors on Gate Oxides", *J. Am. Chem. Soc.* **126**: 15048 (2004).

SELECTED SIGNIFICANT PUBLICATIONS

J. J. Urban, D. V. Talapin, E. V. Shevchenko, C. R. Kagan, and C. B. Murray, "Synergistic Effects in Binary Nanocrystal Superlattices: Enhanced p-Type Conductivity in Self-Assembled PbTe/Ag₂Te Thin Films," *Nature Mater.* **6**: 115 (2007).
D. V. Talapin, C. T. Black, C. R. Kagan, E. V. Shevchenko, A. Afzali, and C. B. Murray, "Alignment, Electronic Properties, Doping, and On-Chip Growth of Colloidal PbSe Nanowires," *J. Phys. Chem.* **C111**: 13244 (2007).

- C. R. Kagan and M. A. Ratner, "Molecular Transport Junctions: An Introduction," *MRS Bulletin* (edited by C. R. Kagan and M. A. Ratner), **29**: 376 (2004).
- C. B. Murray, C. R. Kagan, and M. G. Bawendi, "Synthesis and Characterization of Monodisperse Nanocrystals and Close Packed Nanocrystal Assemblies," *Ann. Rev. Mater. Sci.* **30**: 545 (2000).
- C. R. Kagan, D. B. Mitzi, and C. D. Dimitrakopoulos, "Organic-Inorganic Hybrid Materials as Semiconducting Channels in Thin-Film Field-Effect Transistors", *Science* **286**: 945 (1999).

SYNERGISTIC ACTIVITIES

Materials Research Society Board of Directors, 3 year term began Jan. 2007
Editorial Advisory Board Member, ACS Journal Nano Letters, 2004-present
Editorial Advisory Board Member, ACS J. Applied Materials and Interfaces, 2008-
NSF advisory board member, US Summer School in Condensed Matter and Materials Physics, 2004-
NSF Workshop, "Building Electronic Function into Molecular Architectures," steering committee and writing committee for report delivered to the NSF
"Molecular Transport Junctions," edited by C. R. Kagan & M. A. Ratner, *MRS Bulletin*, (Mater. Res. Soc., PA (2004)).
"Thin Film Transistors," edited by C. R. Kagan & P. S. Andry (Marcel Dekker, NY, 2003).
International College on Theoretical Physics, Lecturer at the Spring College on Science at the Nanoscale, 2004.
"US-Argentina NSF Workshop on Molecular Electronics and Quantum Dots," Lecturer, 2003.
Co-chair Gordon Research Conference on the Chemistry of Electronic Materials, 2005
Organize symposia at ACS, APS, and MRS meetings

COLLABORATORS (past 48 months)

Ali Afzali (IBM), Norton Lang (IBM), Paul Solomon (IBM), Christopher Murray (U. Pennsylvania), Colin Nuckolls (Columbia U.), Louis Brus (Columbia U.), Michael Steigerwald (Columbia U.), Ron Pindak (BNL), Ben Ocko (BNL), Chuck Black (BNL), Jim Batteas (Texas A&M), Mark Ratner (Northwestern U.), Rudy Ludeke (IBM), Dmitri Talapin (U. Chicago), Elena Schevchenko (ANL), Jeffrey Urban (Molecular Foundry), George Tulevski (IBM), Brian Litt (U. Pennsylvania), Virgil Percec (U. Pennsylvania), Jay Kikkawa (U. Pennsylvania)

Graduate Advisor: Mounqi Bawendi; **Postdoc Advisors:** Tim Harris, Alex Harris, David Mitzi

Current Advisees: Postdoc: Paul Frail; **PhD Students:** Sangameshwar Rao Saudari, Wenting Li, Marjan Saboktakin, David Kim; **MA Students:** Kewei Liu, Jiaqi Tang, I-Ying Chen, Yuming Lai; **Undergraduates:** Hal Emmer, Kunal Rai

Advisees/Postdocs Last 5 years:

Garrett Traub (Ossining High School, now at Princeton U.), Mehmet Noyan (Chappaqua High School, currently at Oxford U.), Liwei Chen, (postdoctoral fellow, currently faculty Ohio U. Chem. Dept.), Libor Vyklicky (postdoc, now at IBM Research), Vikram Sundar (postdoc, now at McKinsey Inc.), George Tulevski, (graduate student, now at IBM), Yaron Cohen, (postdoctoral fellow, now post-doc at Weizmann Inst.), Saurabh Madaan (recent MSE graduate).
Mentored 5 undergraduate students (2007-2008), 2 REU students (2007, 2008) and in years prior 3 IBM summer interns and 1 NSF IGERT student