KYEONGJAE (KJ) CHO, Ph.D.
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RESEARCH AND TEACHING AREA

Multiscale modeling for rational design of nanomaterials – **The main research theme is the materials by design.** Research topics include complex oxides, 2D materials, and device material interface problems. Main application areas are nanoelectronic devices and clean energy technology (energy storage and pollution control). Modeling methods mainly based on quantum and atomistic simulations. The integrating material research theme is the **transition metal compounds** (TMCs) which encompass battery electrodes, pollution control catalysts, and TMDs. The research goal is to **design and experimentally realize** novel TMCs for energy and device applications. Teaching is ranging over materials science, solid state physics and solid mechanics. As a pedagogical tool, the 'material design' concept is illustrated by the MSL simulator at nanoHUB (2003 users and 8163 runs at www.nanohub.org). For industrial applications, the multiscale material design framework was applied to design and develop PdAu and Mn-mullite diesel oxidation catalysts to replace Pt group metal nanocatalysts in start-up companies.

EDUCATION

- Seoul National University, B.Sc. in Physics (1986)
- Seoul National University, M.Sc. in Physics (1988); Thesis entitled "**Studies on the Interference Effect between XPS and Auger Process**" advised by Prof. S.-J. Oh
- Massachusetts Institute of Technology, Ph.D. in Physics (1994); Thesis entitled "**New Methods for Calculation of Dynamical Properties of Many-Particle Systems**" advised by Prof. John D. Joannopoulos

POSITIONS

1994 - 1995	Postdoctoral Associate, Department of Physics, M.I.T.
1995 - 1996	Research Associate, Division of Engineering and Applied Sciences, Harvard University (joint position with MIT)
1995 - 1997	Research Scientist, Research Laboratory of Electronics, M.I.T.
1997 - 2006	Assistant Professor, Department of Mechanical Engineering, Stanford University
1999 - 2004	Assistant Professor by Courtesy, Department of Materials Science and Engineering, Stanford University
2003 - 2012	Co-founder and Scientific Advisor, Nanostellar Inc.
2006 - 2012	Associate Professor (tenured), MSE and Physics, University of Texas at Dallas
2012 - Present	Professor (tenured), Materials Science and Engineering, UT Dallas

JOURNAL PUBLICATIONS (Attachment 1: Publication List)

- 298 Journal Papers
- 41 Conference Proceeding Papers
- Jan. 28, 2018 Citation Numbers: SCI = 13,010, SCOPUS = 16,183, GOOGLE = 22,178
- SCI h-index = 53, SCOPUS h-index = 53, GOOGLE h-index = 64

Book Editing, Chapters: 1 book editor, 1 book chapter
PATENTS: 6 United States patents awarded, 1 Korea Patent awarded

INVIDTED TALKS (Attachment 2: List of Invited Talks)

- 84 invited talks at international conferences and workshops
- 175 invited department seminars and tutorial talks

ACADEMIC AVITITY RECORD (Attachment 3: Academic Activity Record)
- 22 PhD students supervised (16 completed); 17 Master students and 26 Postdocs supervised
- Teaching 24 quarters at Stanford University (5 materials science courses developed)
- Teaching 19 semesters at the University of Texas at Dallas
- Awarded 53 research funds from federal and industrial funding agencies (10 active)

PROFESSIONAL ACTIVITIES
- Members of American Physical Society, Material Research Society, IEEE, ASME
- Referees for Physical Review Letters, Physical Review A, B and E, Material Science and Engineering, International Journal of Solids and Structures, Journal of Biochemistry, and Computational Materials Science
- Symposium Organizers/Chairs for MRS 99 Fall Meeting, USNCCM 99 Meeting, NSF Nanomechanics Workshop, ICES 2000 Meeting, MRS 2000 Fall Meeting, WCCM 2002 Meeting
- Members of Editorial Boards of Modeling and Simulation in Materials Science and Engineering (2001), Computer Modeling in Engineering & Science (2002), Journal of Computational and Theoretical Nanoscience (2003), and Computational Materials Science (2014-present); Topical Editor of Current Applied Physics (2013-present).
- Member of Stanford Materials Council (2000-2004) and Director of Stanford Computational Materials Science Lab (2001-2004)
- Technical Chair of Nanotechnology Committee in the U.S. Association of Computational Mechanics (2001 – 2003)
- Organizer of the KIAS Electronic Structure Calculation Workshop (2007, 2008, 2009, 2010, 2011, 2012, 2013)
- Organizer of the Graphene Research Workshop (2009, 2010)

AWARDS/HONORS/OTHERS
- Sammi Industrial Fellowship (1985-1986)
- Moojin Science Foundation Fellowship (1988)
- Korean Government Overseas Study Fellowship (1988-1990)
- MIT Industry Liaison Fellowship (1988)
- Korean Government Overseas Graduate Student Award (1991)
- Korean Government Overseas Graduate Student Award (1992)
- "Simulating Reality" from PhD research work cited by White House Report on National Science Policy (Aug. 1994)
- Outstanding Young Researcher Awards, Association of Korean Physicists in America (1996)
- Packard Foundation Frederich E. Terman Junior Faculty Fellowship (1997-2000)
- Veridian Outstanding Technical Authors Award (2000)
- Member of Technical Advisory Board, Profit Logic Inc. (2000 – 2003)
- Fellow of the Institute of Physics (Elected in 2002)
- "Nanomaterials for Clean Energy," cited in President's Council of Advisors On Science And Technology Report (May 16, 2005).
- KIAS Scholar (2007-2009).
- WCU visiting professor at Seoul National University (2009 – 2015)
- Fellow of the American Physical Society (elected in 2016).