

Byung I. Kim, Ph. D

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(i) Professional Preparation

Korea Advanced Institute of Science and Technology	Physics	BS, 1991
Seoul National University	Physics	MS, 1993
Seoul National University	Physics	Ph. D, 1998
University of Houston	Chemical Physics	1998-2001
Sandia National Laboratories	Biophysics	2001-2004

(ii) Professional Experiences

2013 Aug.– Present: Professor, Boise State University
2012 Sep. –2013 Aug.: Visiting Professor, Seoul National University
2009 Aug.– 2013 July: Associate Professor, Boise State University
2004 July– 2009 July: Assistant Professor, Boise State University
2001 Nov.– 2004. July: Postdoctoral Appointee, Sandia National Laboratories
1998 Nov.– 2001. Oct: Research Associate I, University of Houston
1998 Aug.– 1998 Nov.: Research Associate, Research Institute for Basic Science at SNU
1997 Jun.– 197 Jul.: ICTP, Visiting Scientist, Trieste in Italy
1996 Mar.-1996 Jul.: Part-time Lecturer, Ajou University, Suwon, Korea
1995 Mar.-1998 Aug.: Research Assistant, Seoul National University
1991 Mar.-1995. Feb.: Teaching Assistant, Seoul National University

(iii) Courses Taught (since joining BSU)

- BMOL 687 Doctoral Preliminary Exam (2018Su, 2019Su, 2020Su)
- BMOL 615 Research in Biomolecular Sciences (2014Fa)
- BMOL 603 (3-3-4) Biophysical Instrumentation and Techniques (2013Fa-2019Fa)
- PHYS 499 (3-0-1) Physics Senior Seminars (2021Su)
- PHYS 422 (3-0-3) Introduction to Biophysics (2005Sp)
- PHYS 497 (0-3-1) Introduction to Biophysics Lab (2005Sp)
- PHYS 295, 395, 495 Research in Physics (2007Sp,2007Fa,2009Fa,2011Sp,2017Sp,2018Su,2020Fa)
- PHYS 293 Internship (2009Fa)
- PHYS 307 (3-3-4) Introduction to Biophysics (2006Sp-2010Sp)
- PHYS 301 (3-3-4) Analog & Digital Electronics (2005Fa,2007Fa,2009Fa,2011Fa,2014Sp-**present**)
- PHYS 212L (0-3-1) Physics II with Calculus Lab (2010Fa,2016Fa-2019Fa,2021Fa-**present**)
- PHYS 211L (0-3-1) Physics I with Calculus Lab (2023Fa-**present**)
- PHYS 112L (0-3-1) General Physics Lab (2005Sp,2006Fa,2007Sp,2017Fa,2022Fa)
- PHYS 111L (0-3-1) General Physics Lab (2004Fa,2011Sp,2012Sp,)

(iv) Honor and Awards

- 2024 IOP Trusted Reviewer
- 2014 COAS Distinguished Research Award (Math and Sciences)
- 2013 Brain Pool Program Award
- 2007 Cottrell College Science Award

(v) Academic Services

- Member of University Faculty Senate (2017-2019).

- Undergraduate Academic Standards and Policy Committee (2016-present)
 - COAS Math/Sciences Promotion to Full Professor Committee (2016-2019)
 - COAS Dean Evaluation Committee (2010, 2013-14)
 - Physics Tenure/Promotion committee (2009- Present)
 - BMOL PhD comprehensive exam Committee (2014-present)
 - Member of the Honor & Awards Committee of College of Arts and Sciences (2005, 2009, 2011).
 - Member of the Institutional Biosafety Committee (IBC) of Boise State University (2004 – 2007)
 - Member of the Mini Development Committee of College of Arts and Sciences (2005-2006)
 - Member of the Bio/Nanophysics Faculty Search Committee of Physics Department (2005-2006).
- (vi) **Memberships**
- Member of Biophysical Society
 - Member of American Vacuum Society
 - Member of American Physical Society
 - Member of Korean-American Scientists and Engineers Association (KSEA)
- (vii) **Research Areas of Interest**
- Investigation of Self-Assembled Water Chains in Biomolecular Interactions by cantilever based optical interfacial force microscopy (COIFM)
 - Probing an enzymatic transition state using single molecular force spectroscopy (SMFS)
 - Development of COIFM Biosensor for proteomic screening
 - Single molecular chiral recognition using electrochemical scanning tunneling microscopy (EC-STM)
 - Separation of topographic features from magnetic force images in magnetic force microscopy (MFM)
 - Biomolecular dynamics using high-speed atomic force microscopy (HSAFM)
 - Nanotribology using friction force microscopy (FFM)
 - SPM based nanolithography
- (viii) **Notable Outreach**
- Byung Kim, Water's amazing chain-like structure, Fifth Annual TEDx Boise, Boise ID April 20, 2019. As one of 12 speakers at TEDx Boise, I talked to the general public (~300 people) about chain-like water during 18 min at JUMP (Jack's urban meeting place), Boise Idaho.
- (ix) **Monograph**
- Byung Il Kim, *Self-Assembled Water Chains: A Scanning Probe Microscopy Approach* (Springer Nature, 2023).
- (x) **Peer-reviewed Publications** (* and ** mark the applicant's undergraduate research assistants and high school interns, respectively.).
1. B. I. Kim, R. D. Boehm,* and H. Agrusa,* Coil-to-Bridge Transitions of Self-Assembled Water Chains Observed in a Nanoscopic Meniscus *Langmuir*, **38**, 4538–4546 (2022).
 2. M.H. Korayem, B.I. Kim and A.H. Korayem,“ Experimental and theoretical analysis of the DMAPS cantilever vibration behavior based on the MCS theory in moist environment.” *Smart Mater. Struct.* **27**, 075059 (2018).
 3. S.H. Jeon, B.W. Ryu, W. Jhe, Z. G. Khim and B. I. Kim, “Reproducible Nanostructure Fabrication Using Atomic Force Microscopy Indentation with Minimal Tip Damage,” *J. Vac. Sci. Technol. B*, **32**, 020601 (2014)..
 4. J. Kim, B. Sung, B. I. Kim, and W. Jhe, “Optimization of force sensitivity in Q-controlled amplitude-modulation atomic force microscopy”, *J. Appl. Phys.* **114**, 054302 (2013).

5. B. I. Kim, R. D. Boehm*, J. R. Bonander*, "Direct Observation of Self-assembled Chain-like Water Structures in a Nanoscopic Water Meniscus", *J. Chem. Phys.* **139**, 054701 (2013).
6. B. I. Kim, L. Smith*; T. Tran*, S. Rossland*, E. Parkinson**, "Cantilever-Based Optical Interfacial Force Microscope in Liquid Using an Optical-Fiber Tip", *AIP Advances* **3**, 032126 (2013).
7. B. I. Kim and R.D Boehm*, "Imaging Stability in Force-Feedback High-Speed Atomic Force Microscopy", *Ultramicroscopy* **125**, 29-34 (2013).
8. B. I. Kim and R. D. Boehm*, "Mechanical Property Investigation of Soft Materials by Cantilever-Based Optical Interfacial Force Microscopy," *Scanning* **35**, 59–67 (2013).
9. B. I. Kim, J. O. Holmes*, M. S. Ryu**, and P. Deschateletes "An AFM-FET Biosensor for Proteomic Screening," *International Journal of Bioscience, Biochemistry and Bioinformatics* **2**, 168 (2012).
10. B. I. Kim, "Effects of long range tip-sample interaction on magnetic force imaging: A comparative study between bimorph driven system and electrostatic force modulation", *J. Appl. Phys.* **111**, 104313 (2012).
11. B. I. Kim and S. Kim*, "Self-Assembled Trimer Structures Highlight the Competitive Roles of Intermolecular and Adsorbate-substrate Interactions: PVBA Trimer on Pd(111)," *Langmuir*, **28**, 8010–8016 (2012).
12. B. I. Kim, J. Hanson*, M. Turner*, and L. Reeder**, "Influence of Solvent on the Chiral Resolution of Organic Molecules on Au(111): EC-STM Study of Biphenyl Dicarboxylic Acid on Au(111) in Aqueous Environment," *Surf. Sci.* **606**, 1340–1344 (2012).
13. B. I. Kim and R.D. Boehm*, "Force-Feedback High-Speed Atomic Force Microscope for Studying Large Biological Systems," *Micron* **43**, 1372-1379 (2012).
14. B. I. Kim, J.A. Rasmussen*, and E. J. Kim*, "Large oscillatory forces generated by interfacial water under lateral modulation between two hydrophilic surfaces," *Appl. Phys. Lett.* **99**, 201902 (2011).
15. B. I. Kim, Reilly Clark*,**, and Tyler Clark**, "Long-Term Structural Changes of Plasmid DNA Studied by Atomic Force Microscopy," *Scanning* **33**, 405 (2011).
16. B. I. Kim, J. R. Bonander*, and J. A. Rasmussen*, "Simultaneous measurement of normal and friction forces using a cantilever-based optical interfacial force microscope," *Rev. Sci. Instrum.* **82**, 053711 (2011).
17. B. I. Kim, "Nanotribology and nanoindentation using advanced scanning probe techniques," *Scanning*, **32**: v–vi. (2010).
18. B. I. Kim, "Separation of Topographic Features from Magnetic Force Images using Capacitive Coupling Effect," *Rev. Sci. Instrum.* **80**, 023702 (2009).
19. J. R. Bonander* and B. I. Kim, "Cantilever Based Optical Interfacial Force Microscope", *Appl. Phys. Lett.* **92**, 103124 (2008).
20. J. Philip, A. Punnoose, B. I. Kim, K. M. Reddy, S. Layne¹, J. O. Holmes*, B. Satpati, P. R. Leclair, T. S. Santos and J. S. Moodera, "Carrier-controlled ferromagnetism in transparent oxide semiconductors," *Nature Materials* **5**, 298-304 (2006).
21. B. I. Kim, "Chiral Recognition of PVBA on Pd(111) and Ag(111) Surfaces", *Langmuir* **22**, 9272-9280 (2006).
22. B. I. Kim, "Direct Comparison Between Phase Locked Oscillator And Direct Resonance Oscillator In The Noncontact Atomic Force Microscopy Under Ultrahigh Vacuum", *Rev. Sci. Instrum.* **75**, 5035(2004).

(before joining BSU)

23. B. C. Bunker, B. I. Kim, J. E. Houston, S. T. Picraux, R. Rosario, A. A. Garcia, M. Hayes, and D. Gust, "Observations of Photo-Switching in Tethered Spiropyran Using the Interfacial Force Microscope" *Nano Letters* **3**, 1723 (2003).
24. B. C. Bunker, D. L. Huber, R. P. Manginell, B. -I. Kim, A. K. Boal, G. D. Bachand, S. B. Rivera, J. M. Bauer, C. M. Matzke, "Incorporation of Bioactive Materials into Integrated Systems", *Proc. SPIE* **5220** 28 (2003).
25. D. L. Huber, R. P. Maginell, M. A. Samara, B. -I. Kim, and B. C. Bunker, "Programmed Adsorption and Release of Proteins in a Microfluidic Device", *Science* **301**, 352 (2003).
26. B.-I. Kim, C. Cai, X. Deng, S. S. Perry, "Adsorption-induced chirality influences surface orientation in organic self-assembled structures: an STM study of PVBA on Pd(111)", *Surf. Sci.* **538**, 45 (2003).
27. L. C. Fernandez-Torres, B.-I. Kim, S. S. Perry, The frictional response of VC(100) surfaces: Influence of 1-octanol and 2,2,2-trifluoroethanol adsorption, *Tribology Letters* **15**, 43 (2003).
28. X. Chen, S. Wang, Y. L. Yang, L. Smith, N. J. Wu, B.-I. Kim, S. S. Perry; A. J. Jacobson, A. Ignatiev, Electrical conductivity relaxation studies of an epitaxial $\text{La}_{0.5}\text{Sr}_{0.5}\text{CoO}_{3-\delta}$ thin film, *Solid State Ionics* **146**, 405 (2002).
29. R. L. Guenard, L. C. Fernandez-Torres, B.-I. Kim, S.S. Perry, P. Frantz, S. V. Didziulis, Selective surface reactions of single crystal metal carbides: alkene production from short chain alcohols on titanium carbide and vanadium carbide, *Surf. Sci.* **515**, 103 (2002)
30. B. I. Kim, S. Lee, R. L. Guenard, L. C. Fernandez-Torres, S. S. Perry P. Frantz and S. V. Didziulis, "Chemical Modification of the Interfacial Frictional Properties of Vanadium Carbide Through Ethanol Adsorption", *Surf. Sci.*(2001) **481**, 185 (2001)
31. C. A. Mims, N. I. Joos, P. A.W. van der Heide, A. J. Jacobson, C. Chen, C. W. Chu, B.-I. Kim, S. S. Perry, Oxygen transport in oxide thin film structures oriented $\text{La}_{0.5}\text{Sr}_{0.5}\text{CoO}_{3-x}$ on single-crystal yttria-stabilized zirconia, *Electrochemical and Solid State Letters* **3**, 59 (2000).
32. H. Lee, S. M. Lee, E. T. Ada, B.-I. Kim, M. Weiss, S. S. Perry, J. W. Rabalais, Shallow implantation of Ti^+ ions in sapphire [$a\text{-Al}_2\text{O}_3(0001)$], *Nucl. Instrum. Meth. B* **157**, 226 (1999).
33. B. I. Kim, U. H. Pi, S. Yoon and Z. G. Khim, "Lithography by tapping mode atomic force microscope with electrostatic force modulation", *Appl. Phys. A* **66**, s95 (1998).
34. B. I. Kim, J. W. Hong, J. I. Kye, Z. G. Khim and S. Yoon, "Construction of Magnetic Force Microscope and its Application to Magnetic Multilayer Films" *J. Kor. Phys. Soc.* **31**, S79 (1997).
35. J. W. Hong, B. I. Kim, J. I. Kye and Z.G. Khim, "Effect of electrostatic force and tapping mode operation of atomic force microscope" *J. Kor. Phys. Soc.* **31**, S83 (1997).
36. J. I. Kye, W. K. Park, B. I. Kim, Z. G. Khim, G. T. Jeong, D. H. Lee, T. E. Shim, and J. G. Lee, Single Electron Tunneling Effect in YBCO Film, *J. Kor. Phys. Soc.* **29**, 354 (1996).
37. B. I. Kim, J. W. Hong, G. T. Jeong, S. H. Moon, D. H. Lee, T. U. Shim and Z. G. Khim, "Effect of $\text{Mg}(\text{OH})_2$ On $\text{YBa}_2\text{Cu}_3\text{O}_7$ thin film on MgO by AFM", *J. Vac. Sci. Technol.* **B12(3)**, 1631 (1994).
38. W. Jo, H-J. Cho, T. W. Noh, B.-I. Kim, D_Y. Kim, Z. G. Khim, and S-I. Kwun, Structural and electro-optic properties of pulsed laser deposited $\text{Bi}_4\text{Ti}_3\text{O}_{12}$ thin films on MgO, *Appl. Phys. Lett.* **63**, 2199 (1993)

(xi) **Book Chapter Publications**

1. Byung I. Kim, "Chapter 55. Magnetic Force Images Using Capacitive Coupling Effect," in *Handbook of Measurement in Science and Engineering*, Volume 3, Myer Kutz (Ed.), Wiley 2001-2024 (2016).

2. Byung I. Kim and Ryan D. Boehm, “Chapter 4. Force-Feedback High-Speed Atomic Force Microscope,” Atomic Force Microscopy (AFM): Principles, Modes of Operation and Limitations by H. Yang (Ed.) Nova Science Publishers, Inc. (2014)
3. Byung I. Kim. “Chapter 6. Cantilever-Based Optical Interfacial Force Microscopy,” Molecular Interactions, Prof. Aurelia Meghea (Ed.), ISBN: 978-953-51-0079-9, InTech, Available from: <http://www.intechopen.com/books/molecular-interactions/cantilever-based-optical-interfacial-force-microscope> (2012).

(xii) **Patents**

1. Inventor: Byung Kim, Invention Title: “Feedback controller in probe microscope utilizing a switch and a inverter” US 9140720. issued on 2015-09-22.
2. Inventor: Byung Kim, Invention Title: “System and method for high-speed atomic force microscopy with switching between two feedback loops,” US9091705 issued on 2015-07-28.
3. Inventor: Byung Kim, Invention Title: “Cantilever-based optical fiber probe interfacial force microscope for partial immersion in liquid,” US08549660, issued on 2013-10-01

(xiii) **Supports (~\$900,000) (since joining BSU)**

1. Osher Faculty Grant (**\$7,500**) COIFM Investigation of Self-Assembled Water Chains in Biomolecular Interactions, 04/01/23-03/31/24; Byung Kim (PI)
2. NSF Wider Persist Project, as co-PI with his colleague and co-instructor Dr. Ferguson, to work on the redesign of the Physics CID course PHYS 301 Analog and Digital Electronics, to incorporate ePortfolios and EBIPs (**\$21,930**), 1 year (September 2016-August 2017)
3. Brain Pool Program Award, Project type: Grant, Total Amount Awarded: **\$21,150**, Agency: Korean Ministry of Education, Science and Technology, Time Periods: 5 months (March 2013 – July 2013): **PI: B. Kim (sabbatical leave research at Seoul National University).**
4. INBRE Summer 2012 INBRE UG Fellowship Prospective Mentor; “Summer Undergraduate Fellowship Mentor“; Agency: Idaho BRIN/INBRE Program; Amount : **\$6,000 (\$5,000 for UG Salary)**; Time Periods: 10 weeks (summer 2012); **PI: B. Kim**
5. National Science Foundation: “MRI: Development of a COIFM with Lateral Modulation for Studying Interfacial Water,” Amount: **\$342,001**: Time Period:10/01/11-09/30/15; **PI: Byung Kim**
6. INBRE Summer 2011 INBRE UG Fellowship Prospective Mentor; “Summer Undergraduate Fellowship Mentor“; Agency: Idaho BRIN/INBRE Program; Amount : **\$6,000 (\$5,000 for UG Salary)**; Time Periods: 10 weeks (summer 2011); **PI: B. Kim**
7. NSF STEP UG Researcher Sponsor: “Biophysics and Condensed Matter Physicist”; **\$1,000 + UG Salary**; Time Periods: 1 year (academic year 2011-2012); **Mentor: B. Kim**
8. National Science Foundation: “IDBR: RUI: Development of a Cantilever Based Optical Interfacial Force Microscope,” Amount: **\$240,181** Time Period: 06/01/09 - 05/31/12; **PI: Byung Kim**
9. The Petroleum Research Fund: “Chiral Recognition of PVBA on fcc(111) Surfaces in Electrochemical Solutions”; Agency: PRF AMERICAN CHEMICAL SOCIETY, Amount: **\$40,000**; Time Periods:6/1/2007-8/31/2009; **PI: Byung Kim.**
10. Cottrell College Science Awards; “Scanning Probe Microscopy of Interfacial Water Confined between Silica Surfaces”; Agency: Research Corporation; Amount: **\$45,683**; Time Periods: 05/11/07 - 05/12/09; **PI: Byung Kim.**

11. Travel Grant for Gordon Research Conference on TRIBOLOGY: Time periods: 06/18/2006 - 06/23/2006, Conference Place: Colby College, Waterville, ME. Agency: Gordon Research Conference ; Amount: **\$660**; Traveler: Byung Kim.
 12. INBRE Summer 2006 INBRE UG Fellowship Prospective Mentor; “Summer Undergraduate Fellowship Mentor“; Agency: Idaho BRIN/INBRE Program; Amount : **\$6,000** (\$5,000 for UG Salary); Time Periods: 10 weeks (summer 2005); **PI: B. Kim**
 13. NSF EPSCoR Startup Augmentation funding; “Development of Interfacial Force Microscope for Water Study”; Agency: University of Idaho; Time Periods : 1 year (June 1, 2005 to May 31, 2006); Amount: **\$10,000**; PIs: Byung Kim (PI)
 14. NIH-SBIR I - Subcontract; “Bypassing Fluidics in Proteomic Screening”, Agency : Potentia Pharmaceuticals, Inc., Amount : **\$100,814** ; Time Periods : 1 year (June 1, 2005 to Nov 30, 2006); PIs: Byung Kim (PI) and Russell, Dale
 15. Collaborative Grant Improvement Initiative (CGII); Achieving excellence in research and scholarship “Biophysical and Biochemical Characterization of Protein Structure and Molecular Interactions in Cell Signaling”, Agency : Boise State University; Amount: **\$22,000** (out of \$150,000) for 2 year. Time periods :2 years (June 2005 to May 2007); PIs: J. Oxford (**PI**), H. Charlier, N. Hazeki-Taylor, B. Kim, B. Knowlton, J. Peloquin, A. Punnoose, and S. Smith (co -PIs).
 16. Faculty Research Initiation Grants (FRIG);“High-Speed AFM For Biomolecular Studies,”; Agency : Boise State University –ORA; Time Periods: 1 year (July 2005-June 2006), Amount:**\$15,000**; PIs: Byung Kim (PI)
 17. Faculty Research Grants (FRG); “Single molecular studies of chiral recognition on fcc(111) surfaces,”; Agency : Boise State University –ORA; Time Periods: 1 year (July 2005 - June 2006), Amount:**\$5,000**; PIs: Byung Kim (PI)
- (xiv) **Recent Conference and Workshop Presentations** (out of 85 since joining BSU)
- (* and ** marks the applicant’s undergraduate research assistants and high school interns, respectively)
1. Kim, B. I., Boehm, R. D.*, & Heydendahl, S. S*. (2023, October). *Self-Assembled Water Chains and their Coil-to-Bridge Transitions in a Nanoscopic Meniscus*. 2023 APS NWS Annual Meeting. College of Western Idaho
 2. Kim, B. I., Boehm, R. D.*, & Heydendahl, S. S.* (2023, August). *COIFM Investigation of Self-Assembled Water Chains in Biomolecular Interactions. The 36th annual US-Korea Conference on Science, Technology, and Entrepreneurship (UKC 2023) Physics Symposium*. Hyatt Regency DFW International Airport.
 3. Kim, B. I. (2023, June). *Direct Observation of Self-Assembled Chain-Like Water Structures in a Nanoscopic Water Meniscus. Urban Forests Beat Heat Waves in a City: 2nd Symposium of Asian Urban Forests Networks (AUFN) for People & Environment*. Four Seasons Hotel Seoul (Nuri Ballroom II 6F).
 4. Kim, B. I. (2023, May). *Force Feedback (an elevator pitch up to 1min 30seconds). The 4th Science and Technology Entrepreneurship Partners’ Upscale Program (STEP-UP 2023)*. Newport Beach, CA.
 5. Kim, B. I. (2023, August). *Force Feedback Probe (One of 30 invitees at IES and StartUp Pitch Competition at UKC 2023). The 5th Innovation and Entrepreneurship Symposium (IES) at UKC 2023*. Hyatt Regency DFW, Dallas TX.
 6. Song, H & Kim, B. I. (2023, October). *Development of an Arduino-Based COIFM Controller. 2023 APS NWS Annual Meeting*. College of Western Idaho

7. Ouckama, A., & Kim, B. I. (2023, October). *Design of a Novel, Inexpensive COIFM Using the DVD Optical Pickup Unit for Nanoscale Water Researches*. 2023APS NWS Annual Meeting. College of Western Idaho

(xv) **Recent Invited Seminars** (out of 30 since joining BSU)

1. Kim, B. I. (2023, September). *Self-Assembled Water Chains*. *Physics Colloquium Series Fall 2023 (Physics Department)*. Boise State University: Boise State University.
2. Kim, B. I. (2023, September). *Direct Observation of Self-Assembled Water Chains and their Coil-to-Bridge Transitions in a Nanoscopic Meniscus*. *PhysicsDepartment (Georgia Tech)*. Georgia Institute of Technology: Georgia Institute of Technology.
3. Kim, B. I. (2023, December). *Self-Assembled Water Chains: A Scanning Probe Microscopy Approach*. *2023 Idaho Chapter Fall Seminar at Idaho Water Center*. Idaho Water Center, Room 218A (322 E Front St, Boise, Idaho 83702)

(xvi) **List of Supervised Students and Their Professional Experience** (since joining BSU)

Recent Undergraduate Students (out of 50)

1. Nick Coldiron (Physics Major, April 2024-present), *Development of an Arduino-Based COIFM Controller*
2. Ayden Ouckama (Physics Major, May 2023- April 2024), *Design of a Novel, Inexpensive COIFM*

Recent High School Interns (out of 22)

1. Hoyoon Song (Bishop Kelly High School) (February 2023- May 2024) *Development of an Arduino-Based COIFM*.

(xvii) **Professional Services** (since joining BSU)

- Peer-Reviewing Service of 150 research manuscripts (since joining BSU) submitted to the following journals: Scientific Reports, Langmuir, Nanotechnology, Applied Physics Letters, Journal of Micromechanics and Microengineering, Journal of Applied Physics, IEEE Sensors, Journal of Adhesion Science and Technology, Review of Scientific Instruments, Scanning, Ultramicroscopy, Scientific Research and Essays, Hindawi Publishing. Physical Chemistry Chemical Physics, Journal of Physics D: Applied Physics, Energy and Buildings, Science China Materials, IEEE Transactions on Mechatronics, Applied Surface Science, Analyst, Journal of Chemical Physics, Smart Materials and Structures.
- Textbook Review Service of three book manuscripts in Biophysics and Analog Electronics since joining BSU: John Wiley & Sons, Inc., Addison Wesley, and Jones and Bartlett Publishers
- Guest Editor of Journal Scanning (2009-2010).
- NSF MRI, NSF IDBR Review panelist (2009, 2010).
- Session Chair at 2012 World Gene/Cell Therapy Online Symposium, May 7, 2012.
- Proposal Reviewer of NSF MRI, NSF IDBR, Research Corporation, Romanian National Research Council, Louisiana Board of Regents Research Competitiveness Subprogram (RCS), BSU Faculty Research Grants (2005-2006), and others.
- Korean American Scientists and Engineers Association (KSEA) Idaho Chapter President (2022-present)
- Chair of KSEA North West Regional Conference 2024 at Boise State University (January 27-28 in 2024)