

Curriculum Vitae: ILKWON OH (吳一權)

Director, National Creative Research Initiative for Functionally Antagonistic Nano-Engineering
Director, Soft Robotics and Intelligent Materials Lab.

Full Professor, Ph.D.

Department of Mechanical Engineering

School of Mechanical and Aerospace Engineering

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ResearcherID: <http://www.researcherid.com/rid/B-7121-2011>

Google Scholar: <http://scholar.google.co.kr/citations?user=GJHV48MAAAAJ>



RESEARCH AND TEACHING INTERESTS

- Soft Robotics (Soft Actuators, Artificial Muscles & Electro-Active Polymers)
- Graphene and 2D Nanomaterials (Vibration Damper, Sound Absorber, Energy Storage)
- Structural Composite Battery and Supercapacitor (Robot Skin, Electric Vehicle, UAV)
- Energy Harvesting and Triboelectricity (Flutter-Induced EH, Ocean EH, Bio-Materials)
- Acoustic Metamaterials, Cellular Structures (Auxetics, TPMS, Topological Insulator)
- Smart Materials and Adaptive Structures (Piezoelectric Shape and Vibration Control)

EDUCATION

Ph.D. KAIST, Mechanical Engineering, Aug. 2001

M.S. KAIST, Aerospace Engineering, Feb. 1997

B.S. Inha University, Aerospace Engineering, Feb. 1995

WORK EXPERIENCE

- **Korea Advanced Institute of Science and Technology**, Daejeon, Republic of Korea
 - Full Professor (March 2015 - Present),
 - Department of Mechanical Engineering, School of Mechanical and Aerospace Engineering
- **Korea Advanced Institute of Science and Technology**, Daejeon, Republic of Korea
 - Associate Professor (August 01, 2010 - February 28, 2015),
 - Graduate School of Ocean Systems Engineering, School of Mechanical, Aerospace and Systems Engineering
- **Chonnam National University**, Gwangju, Republic of Korea
 - Associate Professor (Apr. 2008 - Aug. 2010)
 - Assistant Professor (Feb. 2004 - Mar. 2008)
 - School of Mechanical Systems Engineering
- **LG Electronics Co.,LTD.**, Seoul, Republic of Korea
 - Senior Researcher (Aug. 2001 - Feb. 2004),
 - LG Digital Appliance Research Laboratory
- **Stanford University**, Stanford, California, USA
 - Visiting Scholar (Dec. 2006 - Dec. 2007), Department of Aerospace Engineering

PROFESSIONAL MEMBERSHIP & DIRECTORSHIP

- Member of American Society of Mechanical Engineers (ASME)
- Member of International Society for Optics and Photonics (SPIE)
- Member of Korean Society of Mechanical Engineers (KSME)
- Member of Korean Society for Noise and Vibration Engineering (KSNVE)
- Member of Korea Nano Technology Research Society (KoNTRS)
- Member of Korean Society for Composite Materials (KSCM)
- Member of The Polymer Society of Korea (PSK)
- Senior Vice Chair of Dynamics, Control & Robotics Section in Korean Society of Mechanical Engineers (KSME), 2024.01.01 ~ Present
- Academic Director, Korean Society for Composite Materials (KSCM), 2024.01.01 ~ Present
- Business Director, Korean Society for Noise and Vibration Engineering (KSNVE), 2024.01.01 ~ Present
- Vice Chair of Dynamics & Control Section in Korean Society of Mechanical Engineers (KSME), 2023.01.01 ~ 2023.12.31
- Finance Director of Dynamics & Control Section in Korean Society of Mechanical Engineers (KSME), 2018.01.01 ~ 2021.12.31
- Editorial Director, Dynamics & Control Section in Korean Society of Mechanical Engineers (KSME), 2015.01.01 ~ 2018.12.31.
- General Director, Korean Society for Composite Materials (KSCM), 2021.01.01 ~ 2023.12.31
- Finance Director, Korean Society for Composite Materials (KSCM), 2019.01.01 ~ 2019.12.31
- Planning Director, Korean Society for Noise and Vibration Engineering (KSNVE), 2023.01.01 ~ 2023.12.31
- International Cooperative Director, Korean Society for Noise and Vibration Engineering (KSNVE), 2022.01.01 ~ 2022.12.31
- General Director, Korean Society for Noise and Vibration Engineering (KSNVE), 2015.01.01 ~ 2016.12.31
- Editorial Director, Korean Society for Noise and Vibration Engineering (KSNVE), 2013.03.01 ~ 2015.12.31
- Editorial Director, Korean Society for Composite Materials, 2014.01.01 ~ 2018.12.31

JOURNAL EDITORIAL BOARD

- Editor-in-Chief, *Advanced Composites Materials*, 2022.01.01 ~ Present
- Associate Editor, *Frontiers in Materials, Smart Materials Section*, 2014 ~ Present
- Associate Editor, *Frontiers in Bioengineering and Biotechnology, Biomimetics and Bionics Section*, 2019 ~ Present
- Associate Editor, *International Journal of Smart and Nano Materials*, 2017 ~ Present
- Editor, *Functional Composites and Structures* (IOP), 2019 ~ Present
- Editorial Board, *Scientific Reports* (Nature), 2016.10.1 ~ Present
- Editorial Board, *Composites Part B: Engineering*, 2019 ~ Present
- Editorial Board, *Actuators*, 2012.01.01 ~ Present
- Editorial Board, *Advances in Nano Research*, 2013 ~ Present
- Editorial Board, *GRAPHENE* (ASP, ISSN: 2167-275X), 2013 ~ Present
- Editorial Board, *International Journal of Precision Engineering and Manufacturing-Green Technology* (IJPEM-GT), 2017.1.1 ~ 2019.12.31
- Editorial Board, Korean Society for Composite Materials, 2010.03.01 ~ 2018.12.31.
- Editor, Korean Society for Noise and Vibration Engineering, 2015.01.01 ~ 2016.12.31.


AWARDS AND HONORS

- 2023 KAIST Globalization Excellence Lab, 2023.02.09.
- 2021 KAIST Impact Research Award (KAIST), 2021.02.15.
- 2020 Innovation Award for Basic Science, Minister Award of MSIT, 2020.12.31.
- 2020 KSCM Academic Award (Korean Society of Composite Materials), 2020.11.5.
- 2018 KAIST Academic Award (KAIST), 2018.02.12.
- 2018 Technology Innovation Award (KAIST Engineering), 2018.12.26.
- 2018 Academic Contribution Award (KSCM), 2018.11.22.
- 2018 Young Scientist Award (Inha University), 2018.12.20.
- 2014 TOP50 Outstanding Academic Achievement Award in Basic Research, Development of biomimetic 3D motion actuators based on multi-dimensional smart carbon-nanostructures, Minister of Education, Science and Technology (MEST)-National Research Foundation of Korea
- 2014 Innovation Award in Energy Technology (에너지기술혁신대상, KETEP), 2014.08.28.
- Selected as 2014' TOP 15 Fusion Technology (KIST Convergence Research Policy Center)
- 2012 TOP50 Outstanding Academic Achievement Award in Basic Research, Development of Bio-mimetic Artificial muscle Actuators based on Smart Carbon Nano-Material, Minister of Education, Science and Technology (MEST), Republic of Korea, 2012.09.13.
- 2010 TOP100 Outstanding Academic Achievement Award in Basic Research, Development of Bio-mimetic and Bio-compatible Electro-Mechanical Polymer Actuators, Minister of Education, Science and Technology (MEST), Republic of Korea, 2010.10.26.
- 2010 TOP100 National Excellent Research & Development Achievement Award, Minister of Education, Science and Technology (MEST), Republic of Korea, 2010.12.06.
- **Best Paper Award**, Study on Water Floatable Artificial Muscles with Hydrophobic and Liquid-impermeable Graphene Paper Electrodes, The 7th World Congress on Biomimetics, Artificial Muscles and Nano-Bio (BAMN 2013), Jeju Island, Korea, 2013.08.26-30.
- **Best Paper Award**, Bio-inspired Three-Dimensional Carbon Nanostructures for High Performance Lithium Ion Battery, The 7th World Congress on Biomimetics, Artificial Muscles and Nano-Bio (BAMN 2013), Jeju Island, Korea, 2013.08.26-30.
- **Best Paper Award** (First Ranked), The Korean Society for Composite Materials (KSCM), (Helical stents based on shape memory polymer with ferromagnetic nanoparticle-decorated graphene flakes), Fall 2012
- **Best Presentation Award**, Korean Society for Noise and Vibration Engineering (KSNVE), (Characteristics of Wave Propagations through Phononic Structure Having Cloaking Zone), Fall 2012
- **Best Presentation Award**, Korean Society for Noise and Vibration Engineering (KSNVE), (Development of Bacterial Cellulose Actuators), Fall 2009
- **Best Presentation Award**, Korean Society for Noise and Vibration Engineering (KSNVE), (Fullerene-based Ionic Polymer Transducers), Spring 2009
- Marquis Who's Who in Science and Engineering, 2006
- Marquis Who's Who in the world, 2007
- **Award of Excellence in Research**, Chonnam National University, 2006
- **TL2005 Gold Medal**, LG Electronics Inc., 2002.03
- Scholarship Award of LG Electronics Company, 2000.05 ~ 2001.08
- **Best Paper Award** in M.S. thesis, Mechanical Engineering, KAIST, 1997.03

BOOK AND BOOK CHAPTERS

1. **Il-Kwon Oh*** and Choonghee Jo, "Bioinspired Artificial Muscles and Robots (Chapter 18)," Handbook of Biomimetics and Bioinspiration, pp. 443-474, World Scientific Series in Nanoscience and Nanotechnology, (Esmail Jabbari, Deok-Ho Kim, Luke P Lee, Amir Ghaemmaghami, Ali Khademhosseini (Eds.), ISBN: 978-981-4354-92-9, May 2014. (Selected as Cover Image)
2. **Il-Kwon Oh***, Jin-Han Jeon, "Ionic Polymer-Metal Composite Actuators (Chapter 10)" Smart Materials Actuators: Recent Advances in Characterization and Applications, Seung-Bok Choi, Jaewhan Kim (Eds.), pp. 195-212, ISBN: 978-1-63482-574-0, Nova Science Publishers, Inc. (New York), 2015
3. Rajesh Kumar, Hyun-Jun Kim, and **Il-Kwon Oh***, "Bio-inspired Engineering of 3D Carbon Nanostructures (Chapter 12)", Carbon Nanomaterials for Biomedical Applications, Zhang, Mei, Naik, Rajesh R., Dai, Liming (Eds.), pp.365-420, ISBN 978-3-319-22861-7, DOI 10.1007/978-3-319-22861-7, 2015, Springer.
4. **Il-Kwon Oh***, Jin-Han Jeon, "Graphene-based Ionic Polymer Actuators (Chapter 3)", Ionic Polymer Metal Composites (IPMCs): Smart Multi-Functional Materials and Artificial Muscles, Mohsen Shahinpoor (Editor), pp. 148-168, ISBN: 978-1-78262-077-8, DOI:10.1039/9781782622581-00148, 19 Nov 2015, Royal Society Chemistry Smart Materials.
5. Kwang Kim*, Viljar Palmre, Jin-Han Jeon, Kinji Asaka, and **Il-Kwon Oh**, "IPMCs as EAPs: Materials (Chapter 9)"

This Book



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World Scientific Series in Nanoscience and Nanotechnology: Volumes 9
Handbook of Biomimetics and Bioinspiration
Biologically-Driven Engineering of Materials, Processes, Devices, and Systems
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Edited by: **Esmail Jabbari** (University of South Carolina, USA), **Deok-Ho Kim** (University of Washington, USA), **Luke P Lee** (University of California, Berkeley, USA), **Amir Ghaemmaghami** (University of Nottingham, UK), **Ali Khademhosseini** (Harvard University, USA & Massachusetts Institute of Technology, USA)

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Global warming, pollution, food and water shortage, cyberspace insecurity, over-population, land erosion, and an overburdened health care system are major issues facing the human race and our planet. These challenges have presented a mandate to develop "natural" or "green" technologies using nature and the living system as a guide to rationally design processes, devices, and systems. This approach has given rise to a new paradigm, one in which innovation goes hand-in-hand with less waste, less pollution, and less invasiveness to life on earth. Bioinspiration has also led to the development of technologies that mimic the hierarchical complexity of biological systems, leading to novel highly efficient, more reliable multifunctional materials, devices, and systems that can perform multiple tasks at one time. This multi-volume handbook focuses on the application of biomimetics and bioinspiration in medicine and engineering to produce miniaturized multi-functional materials, devices, and systems to perform complex tasks. Our understanding of complex biological systems at different length scales has increased dramatically as our ability to observe nature has expanded from macro to molecular scale, leading to the rational biologically-driven design to find solution to technological problems in medicine and engineering.

The following three-volume set covers the fields of bioinspired materials, electromechanical systems developed from concepts inspired by nature, and tissue models respectively.

INVITED TALKS AT INTERNATIONAL CONFERENCES

1. [Invited Talk] I.K. Oh, "Electroactive Soft Actuators Based on MXene-MOF Nanoarchitectures", Materials Research Society 2023 Spring Meeting (MRS 2023 Fall), Boston, Massachusetts, United States, November 26-December 1, 2023.
2. [Plenary Lecture] I.K. Oh, "Ionic Soft Actuators based on Functional Nanomaterials", AMSM2021(Online), Japan, November 11, 2021.
3. [Plenary Lecture] I.K. Oh, "Recent Progress on Ionic Soft Actuators based on Nanomaterials", EuroEAP2021(Online), Sweden, June 2, 2021.
4. [Plenary Lecture] I.K. Oh, "Recent Progress on Ionic Soft Actuators and Their Future Applications" BAMN2019, (Maine, USA), International Congress on Biomimetics, Artificial Muscles and Nano-Bio, September 8-11, 2019.
5. [Invited Talk], J. Oh, J.S. Kim, I.K. Oh, "Graphene Oxide-based Sound Absorber" 2019 SPIE Smart Structures/NDE, (Denver, USA), 2019, March 6.
6. [Keynote Lecture] I.K. Oh, "Ionic Soft Actuators Based on Nano-Carbons" ISFSE2018 (HUST, China), The 4th International Symposium of Flexible and Stretchable Electronics 2018, June 28.
7. [Invited Talk] I.K. Oh, "Morphological Control of Touch Surfaces Based on Soft Elastomer Actuators" IMID2018 (BEXCO, Korea), The 18th International Meeting on Information Display, 2018, August 29.
8. [Keynote Lecture] I.K. Oh, "Graphene-based Soft Actuators and Devices", International Seminar for Special Doctoral Program "Green Energy Conversion Science and Technology", August 31~September 2, 2016. Yatsugatake, Yamanashi, Japan.
9. [Invited Talk] I.K. Oh, "Growth of Graphene-based 3D Nanostructures for Energy Storage and Electro-Mechanical Actuator" ENGE2016, November 11, 2016, Jeju, Korea,
10. [Invited Talk] I.K. Oh, "Bio-Inspired Graphene Composites for Hydrophobic Surfaces, Energy Storage and Actuators" BAMN 2015, August 24-26, 2015. Canada
11. [Invited Talk] I.K. Oh, "Graphene-based 3D Carbon Nanostructures for Electro-Active Polymers" 2014 International Union of Materials Research Societies-The IUMRS International Conference in Asia (IUMRS-ICA 2014), August 24-30, 2014.
12. [Keynote Lecture] J.H. Jeon, R.K. Cheedarala, I.K. Oh, "All-organic Ntda-SPI-IL actuator based on π - π stacked 3D ionic network polymer", 2014 International Conference on Computational & Experimental Engineering and Sciences (ICCES'14), 12-17 June, 2014, Changwon, Korea
13. [Invited Talk] I.K. Oh, "Highly Sustainable Electroactive Artificial Muscles with Graphene Paper Electrodes" 2014 IEEE/ASME International Conference on Advanced Intelligent Mechatronics, July 8-11, 2014, Besançon, France
14. [Invited Talk] I.K. Oh, "2D Graphene and BN Quantum Dots" The 7th World Congress on Particle Technology (WCPT7 2014), May 19-22, 2014.
15. [Invited Talk] I.K. Oh, "Defect Engineering of Graphene-based Three Dimensional Carbon Nanostructures for Energy Storage Applications" Graphene 2014, May 6-9, 2014, Toulouse, France
16. [Invited Talk] I.K. Oh, "Recent Progress on Graphene-based Artificial Muscles", 2014 SPIE Smart Structures/NDE March 9-13, 2014, San Diego, USA
17. [Invited Talk] I.K. Oh, "Three-Dimensional Carbon Nanostructures for Energy Storage Systems" 2013 International Conference on Small Science, Dec. 15-18, 2013, Las Vegas, USA.
18. [Keynote Lecture] I.K. Oh, "Graphene-based Nano-materials and Their Applications to Artificial Muscles", APCOM&ISCM 2013, 5th Asia Pacific Congress on Computational

- Mechanics & 4th International Symposium on Computational Mechanics, 2013.12.11-14, Singapore.
19. [Invited Talk] I.K. Oh, D. Lee, B. J. Kwon, C. Jo and K.C. Park , "Tunable bandgap in active acoustic metamaterials controlled with electric shunt circuits", ASEM13, Jeju Island, 2013.09.08-11, Korea.
 20. [Keynote Lecture] I.K. Oh, "Graphene-based Artificial Muscles", BAMN2013, The 7th World Congress on Biomimetics, Artificial Muscles and Nano-Bio, Jeju Island, 2013.08.26-30, Korea
 21. [Invited Lecture] I.K. Oh, "Graphene-based Electromechanically Active Polymers", EuroEAP 2013, Third international conference on Electromechanically Active Polymer (EAP) transducers & artificial muscles, Dübendorf, Zürich, Switzerland, 2013.06.25-26 [So called EAPodium]
 22. [Invited Talk] I.K. Oh, "Vibro-Acoustic Waveguide with Tunable Bandgap", Phononics 2013, Sharm El-Sheikh, Egypt, 1013.06.02-07
 23. [Plenary Lecture] I.K. Oh, "Recent Progress on Graphene-based Artificial Muscles" ICEP2012, International Conference on Electroactive Polymers, Banaras Hindu University, India, 2012.11.6,
 24. [Invited Talk] I.K. Oh, "Durable Ionic Polymer-Graphene Composite Actuator with Graphene Bucky Paper Electrodes" 2012 IUMRS-ICEM Conference, Yokohama, Japan, 2012.09.26
 25. [Keynote Lecture] I.K. Oh, "Microwave graphene synthesis and graphene-based sensors/actuators", 2012 SPIE Smart Structures/NDE, Town & Country Resort and Convention Center, San Diego, California, USA, 2012.03.12
 26. [Invited Talk] I.K. Oh, "Synchronized switched electromagnetic damper for vibration control of flexible beams" 3rd International Conference on Smart Materials and Nanotechnology in Engineering, Shangri-La Hotel, Shenzhen, China , 2011.12.06
 27. [Invited Talk] I.K. Oh, "Microwave Graphene Synthesis and Graphene-based Artificial Muscles", The 6th World congress on Biomimetics, Artificial Muscles and Nano-Bio, Cergy-Pontoise, Paris, France, 2011.10.26
 28. [Invited Talk] I.K. Oh, "Electroactive Novel IPMC Actuators and Their Applications", 4th International Conference on Artificial Muscles+The 5th World congress on Biomimetics, Artificial Muscles and Nano-Bio, Osaka, Japan, 2009.11.26

INVITED TALKS AT UNIVERSITIES, RESEARCH INSTITUTES AND DOMESTIC CONFERENCES

29. [Invited Talk] I.K. Oh, "나노복합재 소프트 액츄에이터 및 응용기술", 한국복합재료학회 추계학술대회, 거제, 2023.11.09.
30. [Invited Talk] I.K. Oh, "Graphene-based Bio-Electronic Soft Actuators" Soft Sensors and Actuators, 추계고분자학회(PSK), 대구, 2015.10.08.
31. [Invited Talk] I.K. Oh, "Fundamentals of Graphene Nanomaterials and Their Applications: Composite Structures, Energy Storage, Surfaces and Actuators" Agency for Defense Development(국방과학연구소), 대전, 2015.10.30.
32. [Invited Talk] I.K. Oh, "Graphene-based Programmable Materials and Actuators" 융합재료과학분과 연세대학교, 서울, 2015.11.19.

33. **[Invited Talk]** I.K. Oh, "그래핀 기반 나노구조체 합성 및 이의 공학적 응용" 인하대학교 기계공학과, 인천, 2015.11.23.
34. **[Invited Talk]** I.K. Oh, "Bio-Inspired Graphene Composites for Energy Storage, Surfaces and Actuators" 한국화학연구원, 대전, 2015.09.15.
35. **[Invited Talk]** I.K. Oh "Bio-Inspired Graphene Composites (Energy, Hydrophobicity, Actuator)" 창원대학교, 창원, 2015.04.10.
36. **[Invited Talk]** I.K. Oh, "Bio-Inspired Graphene Composites & Applications" 전북대학교, 전주, 2015.4.8.
37. **[Invited Talk]** I.K. Oh, "Bio-Inspired Graphene Composites" 대우조선해양, 서울, 2015.1.30.
38. **[Invited Talk]** I.K. Oh, "Graphene-Based Soft Actuators: Artificial Muscles" Ulsan National Institute of Science and Technology, Ulsan, 2014.09.23.
39. **[Invited Talk]** I.K. Oh, "Graphene Hybrid Materials for Energy Storage and Actuator Devices" 한국원자력연구원, 대전, 2014.08.14.
40. **[Invited Talk]** I.K. Oh, "3 차원 카본 나노 소재의 합성 및 응용" 서울대학교, 기계항공공학부, 2014.03.21.
41. **[Invited Talk]** I.K. Oh, "Graphene-based 3D Carbon Nanostructures and Introduction to Electro-Active Polymers" 2013.08.02, Ulsan National Institute of Science and Technology, Korea (Requested from Prof. SangYoung Lee)
42. **[Invited Talk]** I.K. Oh, "Microwave Synthesis of 3D Carbon Nanostructures and Their Applications to Electro-Active Polymers: Energy Harvesting" 2013.07.23, **LG Electronics Research & Development Campus (LG 전자기술원)**, Korea (Invited Talk)
43. **[Invited Talk]** I.K. Oh, "Synthesis of Graphene-based 3D Nanostructures and Their Application to Electro-Active Polymers: Haptic Devices" 2013.07.16, **SAMSUNG Advanced Institute of Technology (SAIT, 삼성종합기술원)**, Korea (Invited Talk)
44. **[Invited Talk]** I.K. Oh, "Application of Transfer Path Analysis for Source Identification and Vibration Estimation" LG Electronics, Changwon, Korea, 2013.05.03.
45. **[Invited Talk]** I.K. Oh, "Introduction to SDSS Laboratory and Recent Progress on Graphene and EAPs" **HYUNDAI Heavy Industry Research Center (현대중공업 중앙연구소)**, 2013.04.18.
46. **[Invited Talk]** I.K. Oh "3D Carbon, Energy, Actuator, and Nano-Bio" iPEN Forum (organized by Chulwon Plasma Research Institute) 2013.07.18, Chulwon, Korea
47. **[Invited Talk]** I.K. Oh, "2D Acoustic Cloak and Active Wave Control Structure Based on Acoustic Metamaterials" **Underwater Stealth Workshop, organized by Agency for Defense Development (ADD, 국방과학연구소)**, Jinhae, Korea, 2013.05.30.
48. **[Invited Talk]** I.K. Oh, "Graphene-Based 3D Carbon Nanostructures and Their Applications" **2013 Korean Society for Composite Materials (KSCM)**, Spring Meeting, Seoul National University, Korea, 2013.05.23.
49. **[Keynote Lecture]** I.K. Oh, "Graphene-Based Nano-Composite Actuators" **2013 The Polymer Society of Korea (PSK, KOREA 고분자학회)**, Annual Spring Conference, 2013.04.11~12.

50. [Invited Talk] I.K. Oh, "Recent Progress on Artificial Muscles and Biomimetic Robots" [Korea Institute of Energy Research \(KIER, KOREA 에너지기술원\)](#), Ulsan UNIST, 2013.01.30, (Requested from Dr Jung-Chul Lee)
51. [Invited Talk] I.K. Oh, "Graphene and Graphene Hybrids" SAMSUNG TECHWIN, 2012.11.22. (Requested from Dr Seungmin Cho)
52. [Invited Talk] I.K. Oh, "Graphene-Based Hybrid Nanostructures and Their Applications" Hanyang University Department of Mechanical Engineering, Seoul, Korea, 2012.10.10.
53. [Invited Talk] I.K. Oh, "Graphene-based Three-Dimensional Carbon Nano-structures" 2012.02.09-11. [Nano Tech Institute](#), University of Texas at Dallas, USA (Prof. Ray H. Baughman Group)
54. [Invited Talk] I.K. Oh, "Microwave Graphene Syntheses and Graphene-based Actuators" 2010.12.16. Artificial Cell Research Group, [National Institute of Advanced Industrial Science and Technology \(AIST\)](#), Osaka, Japan (Kinji Asaka Group)
55. [Invited Talk] I.K. Oh, "Microwave-based Graphene Syntheses and Graphene-based Actuators" 2010.12.09, Sungkyunkwan University, Suwon, Korea (Requested from Prof. Jonghyun Ahn)
56. [Invited Talk] I.K. Oh, "Artificial Muscles and Biomimetic Robots" 2010.12.06, KAIST Department of Mechanical Engineering, Daejeon, Korea (Invited Talk)
57. [Invited Talk] I.K. Oh, "Electroactive Polymer Actuators and Graphene Synthesis" 2010.08.23 [Korea Institute of Materials Science \(KIMS, KOREA 재료연구소\)](#), Changwon (Invited talk)
58. [Invited Talk] I.K. Oh, "Biomimetic Polymer Actuators and their Applications" 2010.01.28 Department of Electrical Engineering, Chosun University (Requested from Prof. Joo-Hyung Kim)
59. [Invited Talk] I.K. Oh, "Electroactive Novel IPMC Actuators and Their Applications" 2009.12.11 KAIST NOVIC (Invited Seminar)
60. [Invited Talk] I.K. Oh, "Novel Electroactive Artificial Muscles" 2009.12.03 KyungSang National University Department of Mechanical and Aerospace Engineering (Invited Seminar)
61. [Invited Talk] I.K. Oh, " Biomimetic Polymer Actuators and their Applications " 2009.05.20 [2009 Korean Society for Mechanical Engineers \(KSME, 대한기계학회\)](#), Spring Meeting, Young Scientist Session
62. [Invited Talk] I.K. Oh, "Introduction to Electroactive Polymer Actuators" 2009.04.10 Korea Aviation University Department of Aerospace Engineering
63. [Invited Talk] I.K. Oh, "Artificial Muscle Type Actuators" 2008.11.06 [Korea Research Institute of Chemical Technology \(KRICT, KOREA 화학연구소\)](#)
64. [Invited Talk] I.K. Oh, "Introduction to Novel Electro-Active Polymer Actuators" [2008 The Polymer Society of Korea \(PSK, KOREA 고분자학회\)](#), Annual Autumn Conference, 2008.10.09~10.

ORGANIZING ACADEMIC COMMITTEE

1. Symposium Chair, SPIE 2024 Smart Structures/NDE, Soft Mechatronics and Wearable Systems, Long Beach, California, USA, 2024.
2. Symposium Co-Chair, SPIE 2023 Smart Structures/NDE, Nano-, Bio-, Info-Tech Sensors, and Wearable Systems, Long Beach, California, USA, March 12-16, 2023.
3. Symposium Chair, AMSM2022: The 6th International Workshop on Active materials and Soft Mechatronics, Georgia Tech, Atlanta, Georgia, USA, October 26-29, 2022.
4. Symposium Co-Chair, SPIE 2022 Smart Structures/NDE, Nano-, Bio-, Info-Tech Sensors and 3D Systems, Long Beach, California, USA, April 6-10, 2022.
5. Symposium Co-Chair, SPIE 2021 Smart Structures/NDE, Nano-, Bio-, Info-Tech Sensors and 3D Systems (Online), USA, April 26-30, 2021.
6. Symposium Co-Chair, SPIE 2020 Smart Structures/NDE, Nano-, Bio-, Info-Tech Sensors and 3D Systems, Anaheim, California, USA, April 26-30, 2020.
7. Congress Chair, AMSM2019: The 4th International Workshop on Active Materials and Soft Mechatronics, Incheon, South Korea, Oct. 16-19, 2019.
8. Symposium Co-Chair, SPIE 2019 Smart Structures/NDE, Nano-, Bio-, Info-Tech Sensors and 3D Systems, Denver, Colorado, USA, March 3-7, 2019.
9. Congress Co-Chair, The 10th World Congress on Biomimetics, Artificial Muscles and Nano-Bio, Maine, USA, Sept. 8-11, 2019.
10. Congress Chair, AMSM2018: The 3rd International Workshop on Active Materials and Soft Mechatronics, KAIST, South Korea, Oct. 23-26, 2018.
11. Congress Chair, BAMN2013: The 7th World Congress on Biomimetics, Artificial Muscles and Nano-Bio, Jeju Island, Korea, 08.26-30, 2013.
12. Organizing Committee, 2014 International Conference on Computational & Experimental Engineering and Sciences (ICCES'14), Changwon, Korea, June 12-17, 2014.
13. Program Committee, SPIE 2017 Smart Structures/NDE, San Diego, USA, March 08-12, 2017
14. Program Committee, SPIE 2016 Smart Structures/NDE, San Diego, USA, March 08-12, 2016
15. Program Committee, SPIE 2015 Smart Structures/NDE, San Diego, USA, March 08-12, 2015
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49. **[Plenary Lecture]** Il-Kwon Oh, "Ionic Soft Actuators based on Functional Nanomaterials", [The 5th International Conference on Active Materials and Soft Mechatronics \(AMSM 2021\)](#), Online, Japan, November 10-12, 2021
50. Manmatha Mahato, and Il-Kwon Oh, "Nano-Structural Multifunctional Carbon Materials for Electroionic Actuators", [The 6th International Conference on Advanced Electromaterials \(ICAE 2021\)](#), (Hybrid) Ramada Plaza Jeju Hotel, Jeju, Korea, November 9-12, 2021

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53. Ji-Seok Kim, Jung-Hwan Oh, and [Il-Kwon Oh](#), "2D Wrinkled Graphene Oxide-Wrapped 3D Auxetic foam for Sound Wave and Shock Energy Multi-Dissipation", [Symposium on the Acoustics of Poro-Elastic Materials \(SAPEM 2020\)](#), Online, United States, March 29 - April 2, 2021
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62. Jongnam Kim, Araz Rajabi Abhari, Manmatha Mahato, and [Il-Kwon Oh](#), "Skin Attachable Motion Sensor based on Triboelectric Nanogenerator with Chitosan-Diatom Composite Film", [The 6th International Conference on Electronic Materials and Nanotechnology for Green Environment \(ENGE 2020\)](#), Ramada Plaza Jeju Hotel, Jeju, Korea, November 1-4, 2020
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101. Jongnam Kim, Jin Young Jung, and [Il-Kwon Oh](#), "Rate-dependent Hysteresis Modeling in Micro stage with Piezo Actuators", [The 14th International Conference on Motion and Vibration Control \(MoViC 2018\)](#), Daejeon, Korea, August 5-8, 2018
102. [Keynote Lecture] [Il-Kwon Oh](#), "Ionic Soft Actuators Based on Nano-Carbons", [The 4th International Symposium of Flexible and Stretchable Electronics \(ISFSE 2018\)](#), HUST, Wuhan, China, June 28-30, 2018
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108. Jaehwan Kim, Seok-Hu Bae, Moumita Kotal, and [Il-Kwon Oh](#), "Graphene-CNT-Ni Nanostructures-based High Performance Ionic Artificial Muscles", [International Symposium on Green Manufacturing and Applications \(ISGMA 2017\)](#), Gyeongju, Korea, June 27 - July 1, 2017
109. Hyun-Jun Kim, Seong-Jun Kim, Jeong-Young Park, and [Il-Kwon Oh](#), "Triboelectric nanogenerator based on bacterial nanocellulose", [International Symposium on Green Manufacturing and Applications \(ISGMA 2017\)](#), Gyeongju, Korea, June 27 - July 1, 2017
110. Moumita Kotal, Hyunjun Kim, Sandipan Roy, and [Il-Kwon Oh](#), "Nitrogen and Sulfur Co-doped Holey Graphene Aerogel For High Performance Compression-Tolerant All Solid-State Supercapacitors", [Trends In Nanotechnology 2017 \(TNT 2017\)](#), Dresden, Germany, June 5-9, 2017

111. Rassoul Tabassian, and Il-Kwon Oh, "Realizing Electroactive Flow Switch by Using Functionally Antagonistic Graphene Coated Mesh", [4th World Congress and Expo on Nanotechnology and Materials Science](#), Barcelona, Spain, April 5-7, 2017
112. Si-Hwa Lee, Moumita Kotal, Jung-Hwan Oh, and Il-Kwon Oh, "Nanohole-Structured, Iron Oxide-Decorated and N-doped Heteronanostructure as Lithium Ion Battery Anode", [Graphene 2017](#), Barcelona, Spain, March 28-31, 2017

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113. [Invited Talk] Il-Kwon Oh, "Growth of Graphene-based 3D Nanostructures for Energy Storage and Electro-Mechanical Actuator", [International Conference on Electronic Materials and Nanotechnology for Green Environment \(ENGE 2016\)](#), Ramada Plaza Jeju Hotel, Jeju, Korea, November 6-9, 2016
114. Ji-Eun Kim, Jung-Hwan Oh, Moumita Kotal, and Il-Kwon Oh, "Pore-Aligned Graphene Aerogel for CDI Electrode", [The 10th Asian-Australasian Conference on Composite Materials \(ACCM-10\)](#), Busan, Korea, October 16-19, 2016
115. Moumita Kotal, Jae-Hwan Kim, and Il-Kwon Oh, "Sulfur and Nitrogen Co-Doped Graphene/PEDOT:PSS Hybrid Electrode for Highly Bendable Ionic Polymer Actuators", [The 10th Asian-Australasian Conference on Composite Materials \(ACCM-10\)](#), Busan, Korea, October 16-19, 2016
116. Ki-Woo Jun, and Il-Kwon Oh, "Wettability Control Using by Wrinkled Dielectric Elastomer Actuator", [The 10th Asian-Australasian Conference on Composite Materials \(ACCM-10\)](#), Busan, Korea, October 16-19, 2016
117. Si-Hwa Lee, Moumita Kotal, and Il-Kwon Oh, "Generation of Nanohole and Decoration of Iron Oxide on Gelatin Functionalized Graphene Aerogel for Lithium Ion Battery Anode", [The 10th Asian-Australasian Conference on Composite Materials \(ACCM-10\)](#), Busan, Korea, October 16-19, 2016
118. Hyun-Jun Kim, Jae-Hwan Kim, Ki-Woo Jun, and Il-Kwon Oh, "Triboelectric Generator Based on Silk Nanofiber", [The 10th Asian-Australasian Conference on Composite Materials \(ACCM-10\)](#), Busan, Korea, October 16-19, 2016
119. Seok-Hu Bae, Ji-Eun Kim, and Il-Kwon Oh, "3D Nano-architecture of Highly Efficient OER Catalysts", [The 10th Asian-Australasian Conference on Composite Materials \(ACCM-10\)](#), Busan, Korea, October 16-19, 2016
120. Jae-Hwan Kim, and Il-Kwon Oh, "3D Carbon Nanostructures-based Electroactive Artificial Muscles", [The 10th Asian-Australasian Conference on Composite Materials \(ACCM-10\)](#), Busan, Korea, October 16-19, 2016
121. Soo-Yeun Kim, and Il-Kwon Oh, "Fabrication of TiO₂-Nb₂O₅ Composite Based Viologen Derivative Electrochromic Electrodes Using Low-temperature Coating Techniques", [The 10th Asian-Australasian Conference on Composite Materials \(ACCM-10\)](#), Busan, Korea, October 16-19, 2016
122. Jae-Hwan Kim, Moumita Kotal, and Il-Kwon Oh, "High-Performance Ionic Polymer Actuators Based on Chemically Co-Doped Graphene Electrodes", [8th International Conference on Recent Progress in Graphene/2D Research \(RPGR 2016\)](#), Sungkyunkwan University, Seoul, Korea, September 25-29, 2016
123. Si-Hwa Lee, Jung-Hwan Oh, Moumita Kotal, Palanichamy Sennu, Sung-Ho Park, Yun-Sung Lee, and Il-Kwon Oh, "Nanohole-Structured, Iron Oxide-Decorated and Gelatin-Functionalized Graphene Aerogel for High Rate and High Capacity Li-Ion Anode", [5th](#)

[International Seminar on Green Energy Conversion](#), University of Yamanashi, Nagano, Japan, August 31 - September 2, 2016

124. [**Keynote Lecture**] [Il-Kwon Oh](#), "Graphene-based Soft Actuators and Devices", [5th International Seminar on Green Energy Conversion](#), University of Yamanashi, Nagano, Japan, August 31 - September 2, 2016
125. Jung-Hwan Jung, Soon-Yong Yang, Seung-Bok Choi, and [Il-Kwon Oh](#), "Graphene-Iron Oxide Hybrid Nano-Structure for Enhancing Shear Stress of MR Fluid", [15th International Conference on Electrorheological Fluids and Magnetorheological Suspensions \(ERMR 2016\)](#), Incheon, Korea, July 4-8, 2016
126. Jung-Hwan Oh, and [Il-Kwon Oh](#), "Nanohole-structured graphene and Pd-embedded porous hybrids for hydrogen storage and CO oxidation", [EMN Meeting on Mesoporous Materials 2016](#), Prague, Czech Republic, June 13-17, 2016
127. Rassoul Tabassian, Jung-Hwan Oh, and [Il-Kwon Oh](#), "Intelligent actuation of water drop on graphene coated mesh", [SPIE Smart Structures + Nondestructive Evaluation 2016](#), Las Vegas, United States, March 20-24, 2016
128. Jae-Hwan Kim, Moumita Kotal, and [Il-Kwon Oh](#), "Chemically modified reduced graphene oxide and PEDOT:PSS composite electrodes based highly bendable ionic polymer actuator", [SPIE Smart Structures + Nondestructive Evaluation 2016](#), Las Vegas, United States, March 20-24, 2016
129. Jun-Ho Choi, and [Il-Kwon Oh](#), "Butterfly-patterned dielectric elastomer actuator utilizing highly stretchable and robust silver nanowires network", [SPIE Smart Structures + Nondestructive Evaluation 2016](#), Las Vegas, United States, March 20-24, 2016
130. Ki-Woo Jun, and [Il-Kwon Oh](#), "Enhanced directional actuation behavior of uni-axially rippled dielectric elastomer actuator", [The 9th International Symposium on Nature-Inspired Technology \(ISNIT 2016\)](#), Hotel ICC, Daejeon, Korea, January 13-15, 2016

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131. Jung-Hwan Oh, Rajesh Kumar, and [Il-Kwon Oh](#), "Microwave-assisted 3D Porous Graphene for Its Multi-functionalities", [The 17th International Conference on Composite Materials \(ICCM 2015\)](#), London, United Kingdom, October 23-24, 2015
132. [**Invited Talk**] [Il-Kwon Oh](#), "Bio-Inspired Graphene Composites for Hydrophobic Surfaces, Energy Storage and Actuators", [Biomimetics, Artificial Muscles & Nano-Bio \(BAMN 2015\)](#), Canada, August 24-26, 2015
133. Ji-Hoon Jeong, Choong-Hee Cho, and [Il-Kwon Oh](#), "Two-dimensional acoustic cloak using axisymmetric cylindrical lattices", [The 44th International Congress and Exposition on Noise Control Engineering \(internoise 2015\)](#), San Francisco, United States, August 9-14, 2015
134. Si-Hwa Lee, [Il-Kwon Oh](#), and Ki-Woo Jun, "Wideband, Flexible and High Performance EMI Shielding Thin Film based on Graphene-Nanotube-Iron 3D Nanostructure", [The 20th International Conference on Composite Materials \(ICCM 20\)](#), Copenhagen, Denmark, July 19-24, 2015
135. Jin-Young Jung, Ba-Reum Kim, and [Il-Kwon Oh](#), "ACCURATE ESTIMATION OF OPERATIONAL FORCES BY USING MODIFIED TRANSFER PATH ANALYSIS CONSIDERING TRANSMISSIBILITY FUNCTIONS", [The 22nd International Congress on Sound and Vibration \(ICSV22\)](#), Florence, Italy, July 12-16, 2015
136. Jung-Hwan Oh, Jung-Hwan Jung, and [Il-Kwon Oh](#), "3D Networked Porous Graphene for

Hydrogen Storage”, [International Conference on Computational & Experimental Engineering and Sciences \(ICCES 2015\)](#), Reno, United States, July 10-24, 2015

137. Tae-Won Na, Jun-Ho Choi, and [Il-Kwon Oh](#), "Hierarchical compact piezoelectric tripod manipulator based on a reverse bridge type amplifier”, [International Conference on Computational & Experimental Engineering and Sciences \(ICCES 2015\)](#), Reno, United States, July 10-24, 2015
138. Seok-Hu Bae, and [Il-Kwon Oh](#), "Multifunctional structural energy storage system”, [The 4th International Conference on Multifunctional, Hybrid and Nanomaterials](#), Sitges, Spain, March 9-13, 2015
139. Si-Hwa Lee, and [Il-Kwon Oh](#), "Wideband, Thin, and Flexible EMI Shielding Film Based on Graphene-Nanotube-Iron Oxide Hetero Nanostructures and PEDOT:PSS”, [SPIE Smart Structures + Nondestructive Evaluation 2015](#), San Diego, United States, March 8-12, 2015
140. Tae-Won Na, Jun-Ho Choi, and [Il-Kwon Oh](#), "Hierarchical Compact Piezoelectric Tripod Manipulator”, [SPIE Smart Structures + Nondestructive Evaluation 2015](#), San Diego, United States, March 8-12, 2015

2014

141. Hyun-Jun Kim, and [Il-Kwon Oh](#), "Conductive, Capacitive, Flexible and Soft Electrodes Based on 3D carbon nanostructures and Conducting Polymer”, [Asian Conference on Nanoscience & Nanotechnology \(AsiaNano 2014\)](#), Jeju, Korea, October 26-29, 2014
142. Si-Hwa Lee, and [Il-Kwon Oh](#), "Wideband, Flexible, and High Performance EMI shielding Film Based on Graphene-Nanotube-Iron Nanostructure”, [Asian Conference on Nanoscience & Nanotechnology \(AsiaNano 2014\)](#), Jeju, Korea, October 26-29, 2014
143. Gun-Tae Kim, and [Il-Kwon Oh](#), "Durable graphene coating on hydrophobic surfaces for drag reduction”, [Asian Conference on Nanoscience & Nanotechnology \(AsiaNano 2014\)](#), Jeju, Korea, October 26-29, 2014
144. Ki-Woo Jun, and [Il-Kwon Oh](#), "Wrinkled Graphene-AgNWs Hybrid Electrode for Stretchable Devices”, [Asian Conference on Nanoscience & Nanotechnology \(AsiaNano 2014\)](#), Jeju, Korea, October 26-29, 2014
145. Tae-Won Na, and [Il-Kwon Oh](#), "Hierarchical Compact Piezoelectric Tripod Manipulator Based on Ribbon-shaped Amplification Mechanisms”, [The 2nd International Conference and Exhibition on Mechanical & Aerospace Engineering \(Mech Aero 2014\)](#), Philadelphia, United States, September 8-10, 2014
146. [Invited Talk] [Il-Kwon Oh](#), "Graphene-based 3D Carbon Nanostructures for Electro-Active Polymers”, [International Union of Materials Research Societies-The IUMRS International Conference in Asia \(IUMRS-ICA 2014\)](#), Fukuoka University, Fukuoka, Japan, August 24-30, 2014
147. [Invited Talk] [Il-Kwon Oh](#), "Highly Sustainable Electroactive Artificial Muscles with Graphene Paper Electrodes”, [IEEE/ASME International Conference on Advanced Intelligent Mechatronics](#), Besançon, France, July 8-11, 2014
148. Su-Ji Gim, Seung-Min Cho, Nikil Koratka, and [Il-Kwon Oh](#), "Durable hydrophobic graphene coating on hierarchically structured copper surface for water harvesting”, [Nano Korea 2014](#), Seoul, Korea, July 2-4, 2014
149. Tae-Won Na, D.-H. Kang, Jin-Young Jung, and [Il-Kwon Oh](#), "2D Rotational motion actuators based on single crystal PMN-PT patches”, [International Conference on Computational](#)

- & [Experimental Engineering and Sciences \(ICCES 2014\)](#), Changwon Exhibition Convention Center, Changwon, Korea, June 12-17, 2014
150. Gun-Tae Kim†, Su-Ji Gim†, Seung-Min Cho, Nikhil Koratkar*, and [Il-Kwon Oh*](#), "Anti-corrosive properties of graphene coating on hierarchically structured copper surface : Experimental investigation", [International Conference on Computational & Experimental Engineering and Sciences \(ICCES 2014\)](#), Changwon Exhibition Convention Center, Changwon, Korea, June 12-17, 2014
151. Jung-Hwan Jung, and [Il-Kwon Oh](#), "Damping Materials Based on Boron Nitride Nano0Composite", [International Conference on Computational & Experimental Engineering and Sciences \(ICCES 2014\)](#), Changwon Exhibition Convention Center, Changwon, Korea, June 12-17, 2014
152. S.-H. Lee, Ki-Woo Jun, and [Il-Kwon Oh](#), "Wideband Graphene-Nanotube Iron Nanostructure Filled PEDOT:PSS Film for EMI Shielding", [International Conference on Computational & Experimental Engineering and Sciences \(ICCES 2014\)](#), Changwon Exhibition Convention Center, Changwon, Korea, June 12-17, 2014
153. [**Keynote Lecture**] Jin-Han Jeon, Ravi Kumar Cheedarala, and [Il-Kwon Oh](#), "All-organic Ntda-SPI-IL actuator based on Π - Π Stacked 3D ionic network polymer", [International Conference on Computational & Experimental Engineering and Sciences \(ICCES 2014\)](#), Changwon Exhibition Convention Center, Changwon, Korea, June 12-17, 2014
154. [**Invited Talk**] [Il-Kwon Oh](#), "2D Graphene and BN Quantum Dots", [The 7th World Congress on Particle Technology \(WCPT7 2014\)](#), Beijing, China, May 19-22, 2014
155. [**Invited Talk**] [Il-Kwon Oh](#), "Defect Engineering of Graphene-based Three Dimensional Carbon Nanostructures for Energy Storage Applications", [Graphene 2014](#), Toulouse, France, May 6-9, 2014
156. [**Invited Talk**] [Il-Kwon Oh](#), "Recent Progress on Graphene-based Artificial Muscles", [SPIE Smart Structures + Nondestructive Evaluation 2014](#), San Diego, United States, March 9-13, 2014

2013

157. [**Invited Talk**] [Il-Kwon Oh](#), "Three-Dimensional Carbon Nanostructures for Energy Storage Systems", [International Conference on Small Science \(ICSS 2013\)](#), Las Vegas, United States, December 15-18, 2013
158. [**Keynote Lecture**] [Il-Kwon Oh](#), "Graphene-based Nano-materials and Their Applications to Artificial Muscles", [The 5th Asia Pacific Congress on Computational Mechanics & 4th International Symposium on Computational Mechanics \(APCOM 2013 & ISCM 2013\)](#), Singapore, December 11-14, 2013
159. [Il-Kwon Oh](#), "Graphene-based artificial muscles", [Training School on Ionic Artificial Muscles \(TSIAM 2013\)](#), Spain, October 29-31, 2013
160. [**Invited Talk**] Doo-Hoo Lee, Byung-Jin Kwon, Choong-Hee Jo, Kwang-Chun Park, and [Il-Kwon Oh](#), "Tunable Bandgap in Active Acoustic Metamaterials Controlled with Electric Shunt Circuits", [The World Congress on Advances in Structural Engineering & Mechanics \(ASEM 13\)](#), Jeju, Korea, September 8-11, 2013
161. Si-Hwa Lee, and [Il-Kwon Oh](#), "Bio-inspired Three Dimensional Carbon Nanostructures for High Performance Lithium Ion Battery", [The 7th Congress on Biomimetics, Artificial Muscles and Nano-Bio \(BAMN 2013\)](#), Jeju, Korea, August 26-30, 2013

162. Jae-Hwan Kim, Jin-Han Jeon, Hae-Sin Lee, Hyun-Eui Lim, and Il-Kwon Oh, "Study on Water Floatable Artificial Muscles with Hydrophobic and Liquid-impermeable Graphene Paper Electrodes", [The 7th Congress on Biomimetics, Artificial Muscles and Nano-Bio \(BAMN 2013\)](#), Jeju, Korea, August 26-30, 2013
163. [**Keynote Lecture**] Il-Kwon Oh, "Graphene-based artificial muscles", [The 7th Congress on Biomimetics, Artificial Muscles and Nano-Bio \(BAMN 2013\)](#), Jeju, Korea, August 26-30, 2013
164. Dae-Hyun Kang, Jin-Young Jung, and Il-Kwon Oh, "Linear to rotation mechanism device with stacked piezo actuator", [The 7th Congress on Biomimetics, Artificial Muscles and Nano-Bio \(BAMN 2013\)](#), Jeju, Korea, August 26-30, 2013
165. Ravi-Kumar Cheedarala, and Il-Kwon Oh, "High thermally stable NTDA-SO₃H based sulfonated polymer metal composite based on Nafion/MWCNT and Nafion/TEOS nanocomposite", [The 7th Congress on Biomimetics, Artificial Muscles and Nano-Bio \(BAMN 2013\)](#), Jeju, Korea, August 26-30, 2013
166. Rajesh Kumar, and Il-Kwon Oh, "Silver nanoparticles decorated reduced graphene oxide materials and its applications for supercapacitors", [The 7th Congress on Biomimetics, Artificial Muscles and Nano-Bio \(BAMN 2013\)](#), Jeju, Korea, August 26-30, 2013
167. [**Invited Talk**] Il-Kwon Oh, "Graphene-based Electromechanically Active Polymers", [The 3rd international conference on Electromechanically Active Polymer transducers & artificial muscles \(EuroEAP 2013\)](#), Dübendorf, Switzerland, June 25-26, 2013
168. Choong-Hee Jo, and Il-Kwon Oh, "Feasible Design of 2D Acoustic Cloaking Based on Impedance Matched Multilayered Structure", [Asia Pacific Vibration Conference \(APVC 2013\)](#), International Convention Center Jeju, Jeju, Korea, June 2-6, 2013
169. [**Invited Talk**] Byung-Jin Kwon, Choong-Hee Jo, Doo-Ho Lee, Kwang-Chun Park, and Il-Kwon Oh, "Vibro-Acoustic Waveguide with Tunable Bandgap", [Phononics 2013](#), Sharm El-Sheikh, Egypt, June 2-7, 2013
170. Il-Kwon Oh, "Graphene-Based Carbon Nanostructures and Their Applications", [International Conference on Computational & Experimental Engineering & Sciences \(ICCES 13\)](#), Seattle, United States, May 24-28, 2013
171. Seok-Hu Bae, and Il-Kwon Oh, "Microwave syntheses of graphene based 3D hybrid nanostructures and their applications to energy storage systems", [SPIE Smart Structures + Nondestructive Evaluation 2013](#), San Diego, United States, March 11-14, 2013
172. Hyun-Jun Kim, Vadahanambi Sridhar, Jung-Hwan Jung, C.-G. Lee, SungJin Park, and Il-Kwon Oh, "Microwave-Assisted Synthesis Of Graphene-Nanotube-Palladium Nanostructures and Their Electrochemical Characteristics", [The 3rd International Conference on Multifunctional, Hybrid and Nanomaterials](#), Sorrento, Italy, March 3-7, 2013

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173. Byung-Jin Kwon, Choong-Hee Jo, Kwang-Chun Park, and Il-Kwon Oh, "WAVE PROPAGATION OF ACOUSTIC METAMATERIALS WITH TUNABLE HELMHOLTZ RESONATORS", [The 2nd International Conference on Computational Design in Engineering \(CODE 2012\)](#), Jeju, Korea, November 13-16, 2012
174. [**Plenary Lecture**] Il-Kwon Oh, "Recent Progress on Graphene-based Artificial Muscles", [The 5th International Conference on Electro Active Polymers: Materials and Devices \(ICEP 2012\)](#), Banaras Hindu University, Varanasi, India, November 4-9, 2012
175. Ravi Kumar Cheedarala, Jin-Han Jeon, Doo-Keek Chang, and Il-Kwon Oh, "Transparent and

- high thermally stable sulfonated polyimide membrane for electric stimuli-responsive bending actuator”, [The 5th International Conference on Electro Active Polymers: Materials and Devices \(ICEP 2012\)](#), Banaras Hindu University, Varanasi, India, November 4-9, 2012
176. [Invited Talk] [Il-Kwon Oh](#), Jin-Han Jeon, Jung-Cheol Yoo, J.-H. Kim, and H. Lim, "Durable Ionic Polymer-Graphene Composite Actuator with Graphene Bucky Paper Electrodes", [IUMRS-International Conference on Electronic Materials \(IUMRS-ICEM 2012\)](#), Yokohama, Japan, September 23-28, 2012
177. Jin-Han Jeon, Jung-Cheol Yoo, and [Il-Kwon Oh](#), "Electrochemical Actuator Based on Tunable Reduced Graphene Oxide Bucky Papers", [International Symposium on Green Manufacturing and Applications \(ISGMA 2012\)](#), Jeju, Korea, August 27-29, 2012
178. Jung-Hwan Jung, and [Il-Kwon Oh](#), "Shape Memory Polyurethane with Graphene-iron Hybrid Nanoparticles for Helical Stents", [The 4th International Conference on Modern Materials and Technologies \(CIMTEC 2012\)](#), Montecatini Terme, Italy, June 10-14, 2012
179. Jin-Han Jeon, and [Il-Kwon Oh](#), "Transparent Ionic Polymer Actuators Based on SPI Membranes and Graphene Electrodes", [The 4th International Conference on Modern Materials and Technologies \(CIMTEC 2012\)](#), Montecatini Terme, Italy, June 10-14, 2012
180. Seok-In Sohn, Dae-Hwan Park, Yeon-Seung Lee, and [Il-Kwon Oh](#), "Hull Separation Optimization of Catamaran Unmanned Surface Vehicle Powered with Hydrogen Fuel Cell", [International Conference on Marine and Naval Engineering \(ICMNE 2012\)](#), Madrid, Spain, March 28-30, 2012
181. [Keynote Lecture] [Il-Kwon Oh](#), "Microwave graphene syntheses and graphene-based sensors/actuators", [SPIE Smart Structures + Nondestructive Evaluation 2012](#), United States, March 11-15, 2012
182. Jin-Han Jeon, and [Il-Kwon Oh](#), "Artificial muscular electro-active polymer actuators based on transparent SPI membranes and graphene electrodes", [International Symposium on Nature-Inspired Technology \(ISNIT 2012\)](#), High1 Resort, Kangwon, Korea, January 9-11, 2012
183. Qunwei Tang, Jin-Han Jeon, and [Il-Kwon Oh](#), "Biomimetic PPy nanoflake array by secondary-template method for glucose biosensor", [International Symposium on Nature-Inspired Technology \(ISNIT 2012\)](#), High1 Resort, Kangwon, Korea, January 9-11, 2012
184. Akbar Jafari, Jin-Han Jeon, and [Il-Kwon Oh](#), "Three-pole electrospinning combined with blade-cage collector with channel electrodes for well-aligned nanofibrous membranes", [International Symposium on Nature-Inspired Technology \(ISNIT 2012\)](#), High1 Resort, Kangwon, Korea, January 9-11, 2012
185. Junghwan Jung, and [Il-Kwon Oh](#), "Helical shape SMP stent with metal decorated graphene", [International Symposium on Nature-Inspired Technology \(ISNIT 2012\)](#), High1 Resort, Kangwon, Korea, January 9-11, 2012

2011

186. [Invited Talk] Jae-Hong Jung, Tai-Hong Cheng, and [Il-Kwon Oh](#), "Synchronized switched electromagnetic damper for vibration control of flexible beams", [3rd International Conference on Smart Materials and Nanotechnology in Engineering](#), Shangri-La Hotel, Shenzhen, China, December 5-8, 2011
187. [Invited Talk] Jin-Han Jeon, Vadahanambi Sridhar, and [Il-Kwon Oh](#), "Microwave Graphene Syntheses and Graphene-based Artificial Muscles", [Biomimetics, Artificial Muscles & Nano-Bio \(BAMN 2011\)](#), Cergy-Pontoise Paris, France, October 25-27, 2011

188. J.-X. Song, Jin-Han Jeon, and Il-Kwon Oh, "FACILE SYNTHESIS OF SULFONATED POLYIMIDE WITH HIGHLY CONDUCTIVE SILVER ELECTRODE VIA DIRECT ION-EXCHANGE SELF-METALLIZATION FOR ELECTRO-ACTIVE ARTIFICIAL MUSCLE", [The 18th International Conference on Composite Materials \(ICCM 18\)](#), International Convention Center Jeju, Jeju, Korea, August 21-26, 2011
189. X. Liang, and Il-Kwon Oh, "Study on the graphene-based actuator", [Behavior and Mechanics of Multifunctional Materials and Composites 2011](#), San Diego, United States, March 7-9, 2011

2010

190. Tai-Hong Cheng, J.-H. Jung, and Il-Kwon Oh, "Electromagnetic material based semi-passive switching shunt damper", [The 3rd International Conference on Multi-Functional Materials and Structures \(MFMS 2010\)](#), Jeonbuk Provincial Government, Jeonju, Korea, September 14-18, 2010
191. Song-Lin Li, Woo-Young Kim, Tai-Hong Cheng, and Il-Kwon Oh, "Dynamic Responses of Helical IPMC Actuator", [The 3rd International Conference on Multi-Functional Materials and Structures \(MFMS 2010\)](#), Jeonbuk Provincial Government, Jeonju, Korea, September 14-18, 2010
192. H.-L. Xing, Jin-Han Jeon, Tai-Hong Cheng, and Il-Kwon Oh, "Auto-disturbance-rejection Controller for Bending Response of IPMC Actuator in Underwater Application", [The 3rd International Conference on Multi-Functional Materials and Structures \(MFMS 2010\)](#), Jeonbuk Provincial Government, Jeonju, Korea, September 14-18, 2010
193. Xu. L, and Il-Kwon Oh, "Electroactive Nano-composite Actuator based on Sulfonated Polyhedral Oligomeric Silsesquioxane (SPOSS) and Nafion", [The 3rd International Conference on Multi-Functional Materials and Structures \(MFMS 2010\)](#), Jeonbuk Provincial Government, Jeonju, Korea, September 14-18, 2010
194. Vadahanambi Sridhar, Jin-Han Jeon, and Il-Kwon Oh, "Graphene-Nafion Nanocomposite Actuators", [The 3rd International Conference on Multi-Functional Materials and Structures \(MFMS 2010\)](#), Jeonbuk Provincial Government, Jeonju, Korea, September 14-18, 2010
195. Jin-Han Jeon, and Il-Kwon Oh, "Snap-through Dynamics of Curved IPMC Diaphragm for Bio-medical Micro-Pump", [The 3rd International Conference on Multi-Functional Materials and Structures \(MFMS 2010\)](#), Jeonbuk Provincial Government, Jeonju, Korea, September 14-18, 2010
196. Jun Lu, Sang-Gyun Kim, Sun-Woo Lee, and Il-Kwon Oh, "Durability studies shed light on the design of novel self-healing artificial muscles by employing ionic network polymers employing ionic network polymers", [The 1st Symposium on Innovative Polymers for Controlled Delivery \(SIPCD 2010\)](#), Garden Hotel, Suzhou, China, September 14-17, 2010
197. Il-Kwon Oh, "GREEN SYNTHESIS OF GRAPHENE NANO-SHEETS", [Recent Advances in Graphene and Related Materials](#), Singapore, August 1-6, 2010
198. Woo-Young Kim, Song-Lin Li, and Il-Kwon Oh, "Shape memory polyurethane with ferromagnetic nanoparticles for a helical stent", [The 5th International Conference on Technological Advanced of ThinFilms & Surface Coating \(ThinFilms 2010\)](#), Harbin, China, July 11-13, 2010
199. M. Rajagopalan, and Il-Kwon Oh, "Novel Polymeric Actuator Based on Sulfonated Polyetherimide: Preparation, Characterization and Actuator Performance", [The 12th International Conference on New Actuators & 6th International Exhibition on Smart](#)

[Actuators and Drive Systems \(Actuator 2010\)](#), Bremen, Germany, June 14-16, 2010

200. Jung-Cheol Yoo, Chang-Doo Kee, and [Il-Kwon Oh](#), "Development of Ultrasonic-optical Fiber Hydrogen Sensor", [The 12th International Conference on Modern Materials and Technologies \(CIMTEC 2010\)](#), Montecatini terme, Italy, June 6-11, 2010
201. Jung-Cheol Yoo, In-Chul Park, Chang-Doo Kee, and [Il-Kwon Oh](#), "Development of ultrasonic Fiber-PZT Sensors for Hydrogen Gas Detection", [1st International Scientific & Engineering Forum](#), Davao city, Philippines, April 16-17, 2010

2009

202. **[Invited Talk]** [Il-Kwon Oh](#), "Electroactive Novel IPMC Actuators and Their Applications", [Biomimetics, Artificial Muscles & Nano-Bio \(BAMN 2009\)](#), Osaka, Japan, November 25-27, 2009
203. Liang Xu, Xuan-Lun Wang, and [Il-Kwon Oh](#), "Sulfonated Polyhedral Oligomeric Silsesquioxane (SPOSS) and Nafion Hybrid Membranes for High-Performance Nano-Composite Actuator", [International Conference on Nano Science and Nano Technology \(ICNST 2009\)](#), Mokpo, Korea, November 5-6, 2009
204. Jin-Han Jeon, S.-P. Kang, and [Il-Kwon Oh](#), "Snap-through Dynamics of IPMC Actuators; From cantilever to diaphragm member", [The 12th International Symposium on Technology for Next Generation Vehicle & Machine](#), Gwang-Ju, Korea, October 30-31, 2009
205. Tai-Hong Cheng, Seung-Hyun Lim, Chang-Doo Kee, and [Il-Kwon Oh](#), "Development of Fiber-PZT Array Sensor System", [2nd International Conference on Multi-functional Materials and Structures \(MFMS 2009\)](#), Qingdao, China, October 9-12, 2009
206. Jung-Hwan Jung, Vadahanambi Sridhar, and [Il-Kwon Oh](#), "Biomimetic Nano-composite Actuator Based on Fullerene-Reinforced Nafion Ionic Polymer", [The 17th International Conference on Composite Materials \(ICCM-17\)](#), Edinburgh, United Kingdom, July 27-31, 2009
207. Jun Lu, and [Il-Kwon Oh](#), "An Ionic Polymer-Metal Composite Actuator Based on PSMI-Incorporated PVDF with Chemical Stability and Performance Durability", [The 2nd International Conference on Smart Materials and Nanotechnology in Engineering](#), Wei-Hai, China, July 8-11, 2009
208. J.-H. Jung, Tai-Hong Cheng, and [Il-Kwon Oh](#), "Fullerene reinforced ionic polymer transducer", [The 2nd International Conference on Smart Materials and Nanotechnology in Engineering](#), Wei-Hai, China, July 8-11, 2009
209. N.-T. Nguyen, Young-Soo Yang, and [Il-Kwon Oh](#), "Position control of ionic polymer metal composite actuator based on neuro-fuzzy system", [The 2nd International Conference on Smart Materials and Nanotechnology in Engineering](#), Wei-Hai, China, July 8-11, 2009
210. Jin-Han Jeon, Tai-Hong Cheng, and [Il-Kwon Oh](#), "Snap-through Dynamics of Bi-stable IPMC Actuator Considering Beam Configuration", [The 2nd International Conference on Smart Materials and Nanotechnology in Engineering](#), Wei-Hai, China, July 8-11, 2009
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