

# 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

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- 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

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

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

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

## WORK EXPERIENCE

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- **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**

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- Fellow Member of Korean Academy of Science and Technology (KAST)
- 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)
- President, Division of Dynamics, Control & Robotics, Korean Society of Mechanical Engineers (KSME), 2025.01.01 ~ Present
- Vice President, Korean Society for Composite Materials (KSCM), 2025.01.01 ~ Present
- Conference Chair, Soft Mechatronics and Wearable Systems in SPIE Smart Structures + Nondestructive Evaluation, 2024.01.01 ~ Present
- Senior Vice Chair, Division of Dynamics, Control & Robotics, Korean Society of Mechanical Engineers (KSME), 2024.01.01 ~ 2024.12.31
- Academic Director, Korean Society for Composite Materials (KSCM), 2024.01.01 ~ 2024.12.31
- 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**

---

- 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

- Editor-in-Chief, *Advanced Composites Materials*, 2022.01.01 ~ 2024.12.31
- 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

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- **2024 Life Achievement Award**, the 7<sup>th</sup> International Conference on Active Materials and Soft Mechatronics (AMSM 2024), Incheon, Korea, 2024.10.27-30.
- **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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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 4<sup>th</sup> 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 18<sup>th</sup> 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  $\pi$ - $\pi$  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 7<sup>th</sup> 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, 5<sup>th</sup> Asia Pacific Congress on Computational

- Mechanics & 4<sup>th</sup> 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 7<sup>th</sup> 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

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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 6<sup>th</sup> 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 4<sup>th</sup> 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 10<sup>th</sup> World Congress on Biomimetics, Artificial Muscles and Nano-Bio, Maine, USA, Sept. 8-11, 2019.
10. Congress Chair, AMSM2018: The 3<sup>rd</sup> 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
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16. Program Committee, SPIE 2014 Smart Structures/NDE, San Diego, USA, March 09-13, 2014
17. Program Committee, SPIE 2013 Smart Structures/NDE, San Diego, USA, March 10-14, 2013
18. Program Committee, SPIE2012 Smart Structures/NDE, San Diego, USA, March 11-15, 2012
19. Organizing Committee, ISNIT2014 The International Symposium on Nature Inspired Technology, Hokkaido University, Sapporo, Japan, Feb 12-15, 2014
20. Program Committee, ISNIT2013 The International Symposium on Nature Inspired Technology, High1 Resort, Kwangwondo, Korea, Jan 06-09, 2013
21. Organizing Committee, ISNIT2012 The International Symposium on Nature Inspired Technology, High1 Resort, Kwangwondo, Korea, Jan 09-11, 2012
22. Program Committee, 2013 International Conference on Control, Automation and Information Science, Ho Chi Minh City, Vietnam, Nov. 25-28, 2013
23. Program Committee, 2012 International Conference on Control, Automation and Information Science, Ho Chi Minh City, Vietnam, Nov. 26-29, 2012
24. Organizing Committee, The 3rd International Conference on Multi-Functional Materials and Structures, Jeonbuk Provincial Government, Jenju, Korea, Sep. 14-18, 2010
25. Organizing Committee, 2011 KSME Annual Fall Conference (Graphene Special Sessions)
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2. Manmatha Mahato, Il-Kwon Oh, “Multimodal Soft Actuator Enabling Biomimetic Motions”, [International Workshop on Bionic Engineering 2024 & International Symposium on Nature-Inspired Technology 2024 \(IWBE 2024 & ISNIT 2024\)](#), Sydney, Australia, 13<sup>th</sup> November 2024
3. Manmatha Mahato, Il-Kwon Oh, “Structural Carbon Materials for Electrochemical Soft Actuators”, [The 2nd International Electronic Conference on Actuator Technology](#), Online, 5<sup>th</sup> November 2024
4. Manmatha Mahato, Il-Kwon Oh, “Soft Robot with Dual Electric and Magnetic Actuation using Metal-Organic Framework”, [The 7th International Conference on Active Materials and Soft Mechatronics \(AMSM 2024\)](#), Songdo ConvensiA, Incheon, Korea, 29<sup>th</sup> October 2024
5. Van Hiep Nguyen, Il-kwon Oh, “Fast-responsive and Super-durable Ionic Actuators for Soft Robotics”, [The 7th International Conference on Active Materials and Soft Mechatronics \(AMSM 2024\)](#), Songdo ConvensiA, Incheon, Korea, 29<sup>th</sup> October 2024
6. Mousumi Garai, Van Hiep Nguyen, Il-Kwon Oh, “Electronically Conjugated Multifunctional Frameworks for Enhanced Performance and Longevity of Electro-Ionic Soft Actuators”, [The 7th International Conference on Active Materials and Soft Mechatronics \(AMSM 2024\)](#), Songdo ConvensiA, Incheon, Korea, 29<sup>th</sup> October 2024
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20. Manmatha Mahato, Il-Kwon Oh, “Engineering Carbon Materials for High-Performance Electro-Ionic Artificial Muscles”, [The 7th International Conference on Mechanical Engineering and Applied Composite Materials](#), Online, 25<sup>th</sup> September 2024
21. Manmatha Mahato, Il-Kwon Oh, “Developing Carbon Materials for Energy Storage Solutions”, [International Conference on Materials Science, Engineering & Technology](#), Online, 11<sup>th</sup> September 2024
22. Taseer Ashhad Kamal, Saewoong Oh, Manmatha Mahato, Il-Kwon Oh, “A Biomimetic Dual Mode Soft Robot Based On High-Performance Functional Co-MOF Derivative”, [The 11th Asian Conference on Multibody Dynamics 2024](#), Suwon Convention Center, Korea, 26<sup>th</sup> August 2024
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45. Jun-Seong Ahn, Jiseok Kim, Jun-Ho Jeong, Inkyu Park, and Il-Kwon Oh, “Triboelectric Energy Harvesting System Based on Recyclable Polymers and Electrodes”, [Materials Research Society 2022 Fall Meeting \(MRS 2022 Fall\)](#), Boston, Massachusetts, United States, November 27 - December 2, 2022
46. Manmatha Mahato, Sanghee Nam, and Il-Kwon Oh, “Multifunctional Covalent Triazine Framework for CO<sub>2</sub> Uptake and Solid-state Flexible Supercapacitor”, [The 7th International Conference on Electronic Materials and Nanotechnology for Green Environment \(ENGE 2022\)](#), Ramada Jeju Hotel, Jeju, Korea, November 6-9, 2022
47. Mousumi Garai, Manmatha Mahato, and Il-Kwon Oh, “Mxene anchored metal organic frameworks for electroactive artificial muscles”, [The 7th International Conference on Electronic Materials and Nanotechnology for Green Environment \(ENGE 2022\)](#), Ramada Jeju Hotel, Jeju, Korea, November 6-9, 2022
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70. **[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
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73. **[Plenary Lecture]** [Il-Kwon Oh](#), "Recent Progress on Ionic Soft Actuators based on Nanomaterials", [Online international conference on Electromechanically Active Polymer transducers & artificial muscles \(EuroEAP 2021\)](#), Online, Sweden, June 1-3, 2021
74. 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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83. 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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91. Jongnam Kim, Il-Kwon Oh, Rajabi-Abhari Araz, and Kwanwoo Han, "Chitosan-Silica Composite film for Wearable Energy Harvesting", [The 4th International Conference on Active Materials and Soft Mechatronics \(AMSM 2019\)](#), Sheraton Grand Incheon Hotel, Incheon, Korea, October 16-19, 2019
92. Saewoong Oh, Il-Kwon Oh, Jimyeung Son, and Sanghee Nam, "Directly Grown Nanowires on Carbon Fabric for Flexible Lithium-ion Batteries", [The 4th International Conference on Active Materials and Soft Mechatronics \(AMSM 2019\)](#), Sheraton Grand Incheon Hotel, Incheon, Korea, October 16-19, 2019
93. Jiseok Kim, Junghwan Oh, and Il-Kwon Oh, "Development of Shock Absorbing Materials based on Auxetics", [The 4th International Conference on Active Materials and Soft Mechatronics \(AMSM 2019\)](#), Sheraton Grand Incheon Hotel, Incheon, Korea, October 16-19, 2019
94. Rassoul Tabassian, and Il-Kwon Oh, "Ionic polymer composite actuator based on a highly-conductive and flexible graphene mesh electrode", [The 4th International Conference on Active Materials and Soft Mechatronics \(AMSM 2019\)](#), Sheraton Grand Incheon Hotel, Incheon, Korea, October 16-19, 2019
95. Rassoul Tabassian, Il-Kwon Oh, and Won-Jun Hwang, "Measurement of an Ionic Induced Potential Inside the Polymer Membrane of Soft Ionic Actuators", [The 4th International Conference on Active Materials and Soft Mechatronics \(AMSM 2019\)](#), Sheraton Grand Incheon Hotel, Incheon, Korea, October 16-19, 2019
96. Mahato Manmatha, Il-Kwon Oh, and Rassoul Tabassian, "Conductive Electron Rich Metal Free Porous Organic Frameworks for High Performance Ionic Soft Actuators", [The 4th International Conference on Active Materials and Soft Mechatronics \(AMSM 2019\)](#), Sheraton Grand Incheon Hotel, Incheon, Korea, October 16-19, 2019
97. Seung-Jin Han, and Il-Kwon Oh, "Numerical Demonstration of Topologically Protected Elastic Waveguide in Hierarchical Hexagonal Lattices", [The 4th International Conference on Active Materials and Soft Mechatronics \(AMSM 2019\)](#), Sheraton Grand Incheon Hotel, Incheon, Korea, October 16-19, 2019
98. Zhou Qitao, Il-Kwon Oh, and Jongnam Kim, "Boosting the Triboelectric Nanogenerator Performance with a Hierarchically Nanostructured Electrode", [The 7th International Conference on Smart Materials and Nanotechnology in Engineering \(SMN 2019\)](#), Shangri-La Hotel, Harbin, China, September 20-23, 2019
99. Van Hiep Nguyen, Il-Kwon Oh, Won-Jun Hwang, Jaehwan Kim, Rassoul Tabassian, Moumita Kotal, Kiwoo Jun, Jung-Hwan Oh, Jimyeong Son, Muhammad Taha Manzoor, and Kwang Kim, "Design and Synthesis of PS-b-PSS Block Copolymer Electrolyte for Electroactive Artificial Muscles", [Biomimetics, Artificial Muscles & Nano-Bio \(BAMN 2019\)](#), Hilton Garden, Bangor Maine, United States, September 8-11, 2019

100. **[Plenary Lecture]** Il-Kwon Oh, "Recent Progress on Ionic Soft Actuators and Their Future Applications", [Biomimetics, Artificial Muscles & Nano-Bio \(BAMN 2019\)](#), Hilton Garden, Bangor Maine, United States, September 8-11, 2019
101. Van Hiep Nguyen, Won-Jun Hwang, Jaehwan Kim, Rassoul Tabassian, Moumita Kotal, Jung-Hwan Oh, Jimyeong Son, Muhammad Taha Manzoor, Kwang Kim, and Il-Kwon Oh, "Molybdenum Disulfide Grown on Graphene as Electrodes for Ionic Artificial Muscles", [Biomimetics, Artificial Muscles & Nano-Bio \(BAMN 2019\)](#), Hilton Garden, Bangor Maine, United States, September 8-11, 2019
102. Jongnam Kim, and Il-Kwon Oh, "Feedforward control with rate-dependent hysteresis compensator for piezoelectric micro stage", [SPIE Smart Structures + Nondestructive Evaluation 2019](#), Denver, Colorado, United States, March 3-7, 2019
103. Saewoong Oh, and Il-Kwon Oh, "Structural supercapacitor based on bicontinuous solid electrolyte with conductive nanowire-carbon fiber electrodes", [SPIE Smart Structures + Nondestructive Evaluation 2019](#), Denver, Colorado, United States, March 3-7, 2019
104. **[Invited Talk]** Junghwan Oh, Ji-Seok Kim, and Il-Kwon Oh, "Graphene Oxide-based Sound Absorber", [SPIE Smart Structures + Nondestructive Evaluation 2019](#), Denver, Colorado, United States, March 3-7, 2019

## 2018

105. Kiwoo Jun, Jongnam Kim, and Il-Kwon Oh, "Study for Acoustic Transmission Loss of Tunable Metasurface based on Dielectric Elastomer Actuators", [International Conference on Acoustics, Vibration and Noise Control \(CAVNC 2018\)](#), International Asia-Pacific Convention Center Sanya, Sanya, China, December 1-3, 2018
106. Muhammad Taha Manzoor, and Il-Kwon Oh, "Graphene Based Two-Dimensional Hybrid Additives for Magnetorheological Fluids", [The 3rd International Conference on Active Materials and Soft Mechatronics \(AMSM 2018\)](#), KAIST, Daejeon, Korea, October 24-25, 2018
107. Jaehwan Kim, Sandipan Roy, Moumita Kotal, Kwang Jin Kim, and Il-Kwon Oh, "Biomimetic Soft Polymer Actuator based on Polymeric Organic Framework-derived Porous Carbon Nanostructures", [The 3rd International Conference on Active Materials and Soft Mechatronics \(AMSM 2018\)](#), KAIST, Daejeon, Korea, October 24-25, 2018
108. Yunhan Lee, Ki Woo Jun, Il-Kwon Oh, and Haeshin Lee, "Carbon Sealant for Macroscopically Damaged Graphene, Derived from Thermal Annealing of Plant-inspired Adhesive", [The 3rd International Conference on Active Materials and Soft Mechatronics \(AMSM 2018\)](#), KAIST, Daejeon, Korea, October 24-25, 2018
109. Junghwan Oh, Ji-Seok Kim, and Il-Kwon Oh, "Graphene Cellular Microstructure for Energy Absorbing Materials", [The 3rd International Conference on Active Materials and Soft Mechatronics \(AMSM 2018\)](#), KAIST, Daejeon, Korea, October 24-25, 2018
110. Saewoong Oh, Seok-Hu Bae, Jimyeong Son, and Il-Kwon Oh, "Development of Structural Battery", [The 3rd International Conference on Active Materials and Soft Mechatronics \(AMSM 2018\)](#), KAIST, Daejeon, Korea, October 24-25, 2018
111. Van-Tien Bui, and Il-Kwon Oh, "Self-Reinforced PVDF-HFP Electrolyte Membrane with Nanoparticles Decoration and Lamellar Structural for Advanced Lithium Ion Battery", [The 3rd International Conference on Active Materials and Soft Mechatronics \(AMSM 2018\)](#), KAIST, Daejeon, Korea, October 24-25, 2018
112. Sanghee Nam, Sima Umrao, and Il-Kwon Oh, "Activated Carbon Woven Fabric Based MXene Negative Electrode and Vanadium Oxide Nanowire Positive Electrode for Structural Lithium

- Ion Battery”, [The 3rd International Conference on Active Materials and Soft Mechatronics \(AMSM 2018\)](#), KAIST, Daejeon, Korea, October 24-25, 2018
113. Hyun-Jun Kim, Kwan-Woo Han, Jae-Eun Kim, Jongnam Kim, Jeong-Young Park, and [Il-Kwon Oh](#), "Eco-Friendly Triboelectric Nanogenerator Improved by Surface Oxidation”, [The 3rd International Conference on Active Materials and Soft Mechatronics \(AMSM 2018\)](#), KAIST, Daejeon, Korea, October 24-25, 2018
114. Jongnam Kim, Hyeong Geon Kim, and [Il-Kwon Oh](#), "Feedforward Control depending on the Input Voltage Rate for Micro Stage with Piezo Actuators”, [The 3rd International Conference on Active Materials and Soft Mechatronics \(AMSM 2018\)](#), KAIST, Daejeon, Korea, October 24-25, 2018
115. Wang Fan, Li Qinchuan, and [Il-Kwon Oh](#), "Highly Bendable Ionic Soft Actuator Based on Carboxylated Bacterial Cellulose Membrane and Polypyrrole Electrode”, [The 3rd International Conference on Active Materials and Soft Mechatronics \(AMSM 2018\)](#), KAIST, Daejeon, Korea, October 24-25, 2018
116. Van Hiep Nguyen, Jaehwan Kim, Kwang-Jin Kim, and [Il-Kwon Oh](#), "Design and Synthesis of PS-b-PSS Block Copolymer Electrolytes for Electroactive Artificial Muscles”, [The 3rd International Conference on Active Materials and Soft Mechatronics \(AMSM 2018\)](#), KAIST, Daejeon, Korea, October 24-25, 2018
117. Sima Umrao, Jaehwan Kim, Rassoul Tabassian, and [Il-Kwon Oh](#), "PEDOT:PSS-Ti3C2Tx MXene Hybrid as an Antagonistically Functionalized Electrode for High-Performance Ionic Soft Actuator”, [The 3rd International Conference on Active Materials and Soft Mechatronics \(AMSM 2018\)](#), KAIST, Daejeon, Korea, October 24-25, 2018
118. Hyeonggeon Kim, Jongnam Kim, and [Il-Kwon Oh](#), "Feedback Controller Integrated with Hysteresis Compensator of Piezoelectric Actuators for Micro Stage Positioning Control”, [The 29th International Conference on Adaptive Structures and Technologies \(ICAST 2018\)](#), Konkuk University, Seoul, South Korea, September 30 - October 4, 2018
119. Jaehwan Kim, and [Il-Kwon Oh](#), "Air-working Electro-Ionic Polymer Actuators based on Highly Porous and Capacitive Carbon Nanostructures”, [The 29th International Conference on Adaptive Structures and Technologies \(ICAST 2018\)](#), Konkuk University, Seoul, South Korea, September 30 - October 4, 2018
120. Junghwan Oh, and [Il-Kwon Oh](#), "Preparation of Pd-embedded Porous Graphene Nanostructures for CO Oxidation”, [The 29th International Conference on Adaptive Structures and Technologies \(ICAST 2018\)](#), Konkuk University, Seoul, South Korea, September 30 - October 4, 2018
121. **[Invited Talk]** [Il-Kwon Oh](#), "Morphological Control of Touch Surfaces Based on Soft Elastomer Actuators”, [The 18th International Meeting on Information Display \(IMID 2018\)](#), BEXCO, Busan, Korea, August 28-31, 2018
122. 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
123. **[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
124. Van Hiep Nguyen, and [Il-Kwon Oh](#), "Polystyrene-b-poly(1-hexyl-3-methylimidazolium 4-styrenesulfonate) Block copolymer for Ionic Electroactive Artificial Muscle”, [The 5th Annual Conference of Vietnamese young scientists \(ACVYS 2018\)](#), Sejong University, Seoul, Korea,

May 20, 2018

125. Kiwoo Jun, Jongnam Kim, and [Il-Kwon Oh](#), "surface morphology control of elastomeric actuator and their application", [SPIE Smart Structures + Nondestructive Evaluation 2018](#), Colorado, United States, March 4-8, 2018
126. Jaehwan Kim, and [Il-Kwon Oh](#), "Bio-inspired High-Performance Artificial Muscles using 3D-networked Carbon Nanostructures", [SPIE Smart Structures + Nondestructive Evaluation 2018](#), Colorado, United States, March 4-8, 2018
127. Jaehwan Kim, Seok-Hu Bae, Moumita Kotal, and [Il-Kwon Oh](#), "Electro-ionic Artificial Muscles based on Three-dimensional Graphene Nanostructures", [3rd International Conference on Composite Materials and Material Engineering \(ICCMME 2018\)](#), Singapore, January 26-28, 2018
128. Jongnam Kim, Kiwoo Jun, and [Il-Kwon Oh](#), "Study for Acoustic characteristics change of Metasurface having patterned electrode based on Dielectric Elastomer Actuators", [International Conference on Acoustics, Vibration and Noise Control \(CAVNC 2018\)](#), International Asia-Pacific Convention Center Sanya, Sanya, China, January 13-15, 2018

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129. 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
130. 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
131. 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
132. 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
133. 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

#### 2016

134. **[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
135. Ji-Eun Kim, Jung-Hwan Oh, Momita Kortal, 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
136. Momita Kortal, 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
137. 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
  138. 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
  139. 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
  140. 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
  141. 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
  142. Soo-Yeun Kim, and Il-Kwon Oh, "Fabrication of TiO<sub>2</sub>-Nb<sub>2</sub>O<sub>5</sub> 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
  143. 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
  144. 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
  145. **[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
  146. 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 \(ERMRS 2016\)](#), Incheon, Korea, July 4-8, 2016
  147. 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
  148. 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
  149. 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

150. 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
151. 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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152. 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
153. [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
154. 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
155. 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
156. 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
157. 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
158. 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
159. 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
160. 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
161. 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

162. 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
163. 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
164. 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
165. 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
166. 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
167. [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
168. [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
169. 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
170. 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
171. 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
172. 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
173. 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
174. [Keynote Lecture] Jin-Han Jeon, Ravi Kumar Cheedarala, and Il-Kwon Oh, "All-organic Ntda-SPI-IL actuator based on  $\Pi$ - $\Pi$  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

175. [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
176. [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
177. [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

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178. [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
179. [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
180. Il-Kwon Oh, "Graphene-based artificial muscles", [Training School on Ionic Artificial Muscles \(TSIAM 2013\)](#), Spain, October 29-31, 2013
181. [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
182. 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
183. 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
184. [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
185. 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
186. Ravi-Kumar Cheedarala, and Il-Kwon Oh, "High thermally stable NTDA-SO<sub>3</sub>H 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
187. 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
188. [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

189. 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
190. **[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
191. [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
192. 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
193. 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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194. 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
195. **[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
196. 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
197. **[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
198. 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
199. 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
200. 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
201. 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

202. [**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
203. 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
204. 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
205. Akbar Jafari, Jin-Han Jeon, and [Il-Kwon Oh](#), "Three-pole electrospinning combined with blade-cage collector with channel electrodes for well-aligned nanofiberous membranes", [International Symposium on Nature-Inspired Technology \(ISNIT 2012\)](#), High1 Resort, Kangwon, Korea, January 9-11, 2012
206. 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

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207. [**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
208. [**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
209. 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
210. 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

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211. 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
212. 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

213. 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
214. 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
215. 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
216. 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
217. 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
218. Il-Kwon Oh, "GREEN SYNTHESIS OF GRAPHENE NANO-SHEETS", [Recent Advances in Graphene and Related Materials](#), Singapore, August 1-6, 2010
219. 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
220. 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
221. 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
222. 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

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223. **[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
224. 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
225. 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

226. 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
227. 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
228. 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
229. 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
230. 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
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232. Xuan-Lun Wang, Tai-Hong Cheng, Liang Xu, and Il-Kwon Oh, "Ionic polymer metal composite actuators employing irradiation-crosslinked sulfonated poly(styrene-ran-ethylene) as ion-exchange membranes", [The 2nd International Conference on Smart Materials and Nanotechnology in Engineering](#), Wei-Hai, China, July 8-11, 2009
233. Tai-Hong Cheng, Xuan-Lun Wang, and Il-Kwon Oh, "Electromagnetic multi-mode shunt damper for flexible beams based on current flowing circuit", [The 2nd International Conference on Smart Materials and Nanotechnology in Engineering](#), Wei-Hai, China, July 8-11, 2009

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234. Tai-Hong Cheng, and Il-Kwon Oh, "Vibration Suppression of Flexible Beam Using Electromagnetic Shunt Damper", [Asian Magnetics Conference \(AMC 2008\)](#), Busan, Korea, December 10-13, 2008
235. Xuan-Lun Wang, and Il-Kwon Oh, "Sulfonated Poly(styrene-b-ethylene-co-butylene-b-styrene) and Fullerene Composites for Ionic Polymer Actuators", [International Conference on Nano Science and Nano Technology](#), Gwangju, Korea, November 6-7, 2008
236. J.-H. Joo, Tai-Hong Cheng, Il-Kwon Oh, and K.-J. Kang, "Vibration and Damping Characteristics of Wire-woven Bulk Kagome Truss PCMs", [Cellular Metals for Structural and Functional Applications \(CELLMET 2008\)](#), Dresden, Germany, October 8-10, 2008
237. Jin-Han Jeon, and Il-Kwon Oh, "Fabrication and actuation of Ionic-Polymer-Metal-Composite Actuator with Selectively Grown Multiple Electrodes", [The 4th International Conference on Technological Advanced of ThinFilms & Surface Coating \(ThinFilms 2008\)](#), Singapore, July 13-16, 2008
238. Jun Lu, Sang-Gyun Kim, Sunwoo Lee, and Il-Kwon Oh, "Ionic Polymer-Metal Composite Actuator Based on PSMI-Incorporated PVDF with Chemical Stability and Performance Durability", [The 4th International Conference on Technological Advanced of ThinFilms & Surface Coating \(ThinFilms 2008\)](#), Singapore, July 13-16, 2008

239. Xuan-Lun Wang, and Il-Kwon Oh, "Reinforcement of Carbon Nanofibers for IPMC Actuators Employing Sulfonated Poly(styrene-b-ethylene-co-butylene-b-styrene) Ionomers Poly(styrene-b-ethylene-co-butylene-b-styrene) Ionomers", [The 15th International Congress on Sound and Vibration \(ICSV 15\)](#), Daejeon, Korea, July 6-10, 2008
240. Lu Jun, Il-Kwon Oh, and R. Hung, "Growth of Spatial Dendrites in Bisphenol-A Polycarbonate Induced by Dioctyl Phthalate at High Pressure", [The 22nd International Liquid Crystal Conference \(ILCC 2008\)](#), Jeju, Korea, June 29 - July 4, 2008
241. Xuan-Lun Wang, Il-Kwon Oh, and Tai-Hong Cheng, "Mechanical Model and Analysis of Ionic Polymer Metal Composites Biomimetic Actuators", [The 7th World Congress on Intelligent Control and Automation \(WCICA 2008\)](#), Chongqing, China, June 25-27, 2008
242. Seong-Won Yeom, and Il-Kwon Oh, "Fabrication and Evaluation of Biomimetic Jellyfish Robot Using IPMC", [The 3th International Conference on Smart Materials, Structures, and Systems \(CIMTEC 2008\)](#), La Perla Ionica, Sicily, Italy, June 8-13, 2008
243. Tai-Hong Cheng, and Il-Kwon Oh, "An Experimental study on Vibration Suppression of Cantilever Beams by Using Electromagnetic Damper and Actuator", [SPIE Smart Structures and Materials & Nondestructive Evaluation and Health Monitoring 2008](#), San Diego, United States, March 9-13, 2008
244. Jun Lu, Kim, Sun-Woo Lee, and Il-Kwon Oh, "Novel electro-active polymer actuator based on ionic networking membrane of PSMI-incorporated PVDF", [SPIE Smart Structures and Materials & Nondestructive Evaluation and Health Monitoring 2008](#), San Diego, United States, March 9-13, 2008
245. Tai-Hong Cheng, and Il-Kwon Oh, "Vibration Suppression of Beam by Using Magnet-coil", [SPIE Smart Structures and Materials & Nondestructive Evaluation and Health Monitoring 2008](#), San Diego, United States, March 9-13, 2008

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246. Xuan-Lun Wang, and Il-Kwon Oh, "Study on the Electro-Deformation Performance of SSEBS Ionic Polymer and Carbon nanofibers Composite Actuator", [The 10th International Symposium on Technology for Next Generation Vehicle & Machine](#), Chonnam National University, Gwangju, Korea, October 26-27, 2007
247. Tai-Hong Cheng, and Il-Kwon Oh, "Static Deformation Analyses of Composite Rotor Blades Based On Fluid- Structure Coupling", [Advanced Technology in Experimental Mechanics 2007](#), Acros Fukuoka, Fukuoka, Japan, September 12-14, 2007
248. Jun Lu, S.-G. Kim, Sun-Woo Lee, and Il-Kwon Oh, "Electro-Active Polymer Actuator Based on Ionic Networkion Membrane of Poly (styrene-alt-malei angydride)-Incorporated Poly (vinylidene fluoride)", [The 2nd International Symposium on Mechanics, Aerospace and Informatics Engineering \(ISMAI-2 2007\)](#), Gyeongsang National University, Jinju, Korea, September 5-8, 2007
249. Xuan-Lun Wang, Il-Kwon Oh, Jun Lu, J.-H. Ju, and Sun-Woo Lee, "Ionic Polymer-Metal Composite Actuators Employing Sulfonated Poly (strene-ethylene-butylene-styrene) as Ionic-Exchange Membranes", [International Conference on Smart Materials and Nanotechnology in Engineering \(SMN 2007\)](#), Harbin, China, July 1-4, 2007
250. Jun Lu, Il-Kwon Oh, Rui Hang, L. Li, Xuan-Lun Wang, and Tai-Hong Cheng, "Extend-chain morphologies in high-pressure crystallized poly(ethylene terephthalate) / bisphenol-A polycarbonate blends", [The 3rd China-Europe Symposium on Properties of Reinforced Polymers](#), Budapest, Hungary, June 11-15, 2007

251. S.-L. Wang, and Il-Kwon Oh, "Biomimetic Composite Actuators Based on S-SEBS Ionic Membrane", [The 10th International Conference on Mechanical Behavior of Materials \(ICM 10\)](#), BEXCO, Busan, Korea, May 27-30, 2007
252. Seung-Hyun Lim, Il-Kwon Oh, and Jung-Ryul Lee, "NOVEL ULTRASONIC ACTIVE OPTICAL FIBER SENSOR FOR HEALTH MONITORING", [The 6th International Symposium on Advanced Composites \(COMP 2007\)](#), Corfu Imperial Hotel, Corfu, Greece, May 16-18, 2007

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253. Jin-Young Jung, and Il-Kwon Oh, "Novel Nano-composite Actuator Based on SSEBS Polymer", [International Conference on Nano Science and Nano Technology](#), Gwangju, Korea, December 7-8, 2006
254. Dong-Hyun Kim, Hyun-Jun Kim, Il-Kwon Oh, and S.-S. Lee, "Nonlinear aeroelastic characteristics of a laminated composite wing considering compressible shock wave effects", [The 5th Asian/Australasian Conference on Composite Materials \(ACCM-5\)](#), Hong Kong, China, November 27-30, 2006
255. Jin-Han Jeon, Il-Kwon Oh, Jae-Hung Han, and Sun-Woo Lee, "Development of Bio-mimetic Patterned IPMC Actuators with Multiple Electrodes", [The 5th Asian/Australasian Conference on Composite Materials \(ACCM-5\)](#), Hong Kong, China, November 27-30, 2006
256. Il-Kwon Oh, Won-Gul Whang, Dong-Hyun Kim, and In Lee, "Stabilization of thermoelastic unstable postbuckling in cylindrical piezolaminated panels", [The 5th Asian/Australasian Conference on Composite Materials \(ACCM-5\)](#), Hong Kong, China, November 27-30, 2006
257. J.-H. Ju, Xuan-Lun Wang, Jin-Han Jeon, Il-Kwon Oh, and Sun-Woo Lee, "Preparation of Ionic Polymers and Their Application as IPMC;sulfonated SEBS and PC", [IUPAC International Symposium on Advanced Polymers for Emerging Technologies](#), BEXCO, Busan, Korea, October 10-13, 2006
258. Il-Kwon Oh, and Jin-Young Jung, "Biomimetic Nano-Composite Actuators Based on Carbon Nanotubes and Ionic Polymers", [International Joint Concurrence of INABIO/SMEBA](#), KAIST, Daejeon, Korea, September 21-23, 2006
259. Seung-Hyun Lim, Jung-Ryul Lee, Fu-Kuo Chang, and Il-Kwon Oh, "Fiber Sensors based on Piezoelectric Ultrasonic Wave", [International Joint Concurrence of INABIO/SMEBA](#), KAIST, Daejeon, Korea, September 21-23, 2006
260. Dong-Weon Lee, and Il-Kwon Oh, "Micro/nanoheater-integrated cantilevers for micro/nano lithography applications", [The 32nd International Conference on Micro-and Nano- Engineering](#), Barcelona, Spain, September 17-20, 2006
261. Il-Kwon Oh, and Dong-Weon Lee, "Resonant Frequency and Instability of Multi-layered Micro-Resonators with Initial Imperfection Subject to Piezoelectric Loads", [The 32nd International Conference on Micro-and Nano- Engineering](#), Barcelona, Spain, September 17-20, 2006
262. Il-Kwon Oh, and Jin-Young Jung, "Active Suppression of Thermoelastic Snap-through of Cylindrical Piezolaminated Panels", [International Workshop on Multidisciplinary Design Exploration in Okinawa 2006](#), Seinen kaikan, Okinawa, Japan, September 12-14, 2006
263. Il-Kwon Oh, and Jin-Han Jeon, "Novel Patterning Method of Multiple Electrode IPMC Actuator for Biomimetic motion", [The 5th Joint Symposium between Doshisha University & Chonnam National University](#), Chonnam National University, Gwangju, Korea, August 8, 2006
264. Il-Kwon Oh, "A Study On Noise Radiation From Compressor Shell", [International](#)



- [Compressor Engineering Conference](#), Perdue University, West Lafayette, United States, July 17-20, 2006
265. [Il-Kwon Oh](#), "Control of Snap-through Instability of Cylindrical Piezolaminated Panels Using Piezoelectric Actuation", [International Conference on Composite Materials & Nano-Structures](#), Concorde Hotel, Shah Alam Selangor, Malaysia, April 25-29, 2006
266. [Il-Kwon Oh](#), "Advanced Aeroelastic Computation of a Composite Curved Missile Fin Using Coupled Parallel Computing", [International Conference on Composite Materials & Nano-Structures](#), Concorde Hotel, Shah Alam Selangor, Malaysia, April 25-29, 2006
267. [Il-Kwon Oh](#), Jin-Han Jeon, and Y.-G. Lee, "Multiple Electrode Patterning of Ionic-Polymer-Metal-Composite Actuators", [SPIE Smart Structures and Materials & Nondestructive Evaluation 2006](#), San Diego, United States, February 26 - March 2, 2006
268. Jin-Han Jeon, and [Il-Kwon Oh](#), "Dynamic Characteristics of Novel Ionic-Polymer-Metal-Composites", [The 1st international Conference on Advanced Nondestructive Evaluation \(ANDE 2005\)](#), Jeju, Korea, November 7-9, 2005
269. [Il-Kwon Oh](#), "TUNABLE MICRO-RESONATORS WITH ELECTROTHERMAL AND PIEZOELECTRIC ACTUATORS", [The 12th International Congress on Sound and Vibration \(ICSV 2005\)](#), Lisbon, Portugal, July 11-14, 2005
270. [Il-Kwon Oh](#), and In Lee, "NONLINEAR DYNAMICS OF ACTIVE PIEZOLAMINATED PLATES ON THERMOPIEZOELASTIC BEHAVIORS", [The 6th International Congress on Thermal Stresses](#), Vienna, Austria, May 26-29, 2005
271. [Il-Kwon Oh](#), "Frequency-Tuning Characteristics of Multi-layered Micro-Resonators Using Thermopiezoelectric Actuation", [The 4th Joint Symposium between Gifu University & Chonnam National University](#), Chonnam National University, Gwangju, Korea, May 2-4, 2005
272. [Il-Kwon Oh](#), "Secondary Instability of Smart Piezolaminated Plates Subject to Thermopiezoelectric Loads", [The 4th Joint Symposium between Chonnam National University & Doshisha University](#), Chonnam National University, Gwangju, Korea, July 27-28, 2004
273. [Il-Kwon Oh](#), D. Huh, and H.-S. Choi, "Reduction of Refrigerant Noise of Dehumidification Systems with Capillary", [The 4th international Symposium on Heating, Ventilation and Air Conditioning \(ISHVAC 2003\)](#), Tsinghua University, Beijing, China, October 9-11, 2003
274. In Lee, Jin-Ho Roh, and [Il-Kwon Oh](#), "Aerothermoelastic Phenomena of Aerospace and Composite Structures", [The 5th International Congress on Thermal Stresses](#), Blacksburg, United States, June 8-11, 2003
275. [Il-Kwon Oh](#), and In Lee, "Aerothermoelastic Analysis of Cylindrical Piezolaminated Shells using ultifield Layerwise Theory", [International Mechanical Engineering Congress and Exposition \(IMECE 2002\)](#), New Orleans, United States, November 17-22, 2002
276. [Il-Kwon Oh](#), Dong-Hyun Kim, Won-Ho Shin, In Lee, and Kyo-Nam Koo, "Vibration and Damping Analysis of Cylindrical Hybrid Composite Panels with Viscoelastic Layer", [The 3rd Asian-Australasian Conference on Composite Materials \(ACCM 2002\)](#), New Zealand, July 15-17, 2002
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280. In Lee, and Il-Kwon Oh, "Snapping and Vibration of Cylindrical Composite Panels Subject to Thermal Loads", [Korean-French Workshop on Composite Materials](#), Seoul, Korea, August, 2000
281. In Lee, Il-Kwon Oh, and Dong-Min Lee, "Vibration and Flutter Characteristics of Stiffened Composite Plate Considering Thermal Effect", [International Mechanical Engineering Congress and Exposition \(IMECE 1997\)](#), Dallas, United States, November 16-21, 1997