

Curriculum Vitae

Dong Won Chun

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EDUCATION

- Yonsei University, Seoul, South Korea
Major: Metallurgical Engineering
B. S. 1998~ 2005
- Yonsei University, Seoul, South Korea
Major: Metallurgical Engineering
Thesis: Self-actuating PZT microcantilevers for biosensor applications
Advisor: Wooyoung Lee
M. S. 2005~ 2007
- University of California San Diego, San Diego, California, U.S.A
Major: Materials Science & Engineering
Thesis: Rare-earth Free Mn-based Magnetocaloric Alloys for Solid State Refrigeration
Advisor: Sungho Jin
Ph. D. 2013~ 2016

RESEARCH EXPERIENCE & EMPLOYMENT

- Energy Materials Research Center, Clean Energy Institute, Korea Institute of Science and Technology (KIST), Seoul, South Korea
Principal Researcher 2022~ Present
- Yonsei-KIST Convergence Research Institute, Seoul, South Korea
Program Chair 2022 ~ Present
- Department of Nanoscience and Technology, University of Science & Technology, Seoul, South Korea
Associate Professor 2023 ~ Present
- Energy Materials Research Center, Clean Energy Institute, Korea Institute of Science and Technology (KIST), Seoul, South Korea
Senior Researcher 2021~ 2022
- Advanced Analysis Center, Korea Institute of Science and Technology (KIST), Seoul, South Korea
Senior Researcher 2016~ 2021
- Functional Materials Center, Korea Institute of Science and Technology (KIST), Seoul, South Korea
Research Scientist 2007~ 2012

RESEARCH INTERESTS

Metal hydrides, Hydrogen storage materials, Super-conductor, Solid-state hydrogen storage system.
Radiation chemistry, In-situ characterization, Transmission electron microscopy (TEM), In-situ TEM (heating/gas/liquid), Machine learning-aided materials characterization

Selected Publications

1. J.Y. Hong[‡], J.H. Bae[‡], H.S. Jo, H.Y. Park, S.H. Lee, S.J. Hong, H.J. Chun, M.K. Cho, J.Y. Kim, J.D. Kim, Y.J. Son, H.N. Jin, J.Y. Suh, S.C. Kim, H.K. Roh, K.H. Lee, H.S. Kim, K.Y. Chung, C.W. Yoon, K.R. Lee, S.H. Kim, J.P. Ahn, H.S. Baik, G.H. Kim, B.C. Han, S.H. Jin, T.H. Hyeon, J.W. Park, C.Y. Son*, Y.S. Yang*, Y.S. Lee*, S.J. Yoo*, **D.W. Chun***, “Metastable Hexagonal Close-Packed Palladium Hydride in Liquid Cell TEM”, *Nature*, 603, 631-636 (2022)
2. J.Y. Hong[‡], J.Y. Kim[‡], J.H. Bae, H.N. Jin, K.H. Lee, Y.S. Lee*, **D.W. Chun***, “Revealing the Hidden Role of Radical Scavengers: Unraveling the Key to Tailoring the formation of hcp PdH_x phase in Graphene Liquid Cell”, *Adv. Funct. Mater.*, 2311293 (2024)
3. J.Y. Kim[‡], J.O. Fadonougbo[‡], J.H. Bae, M.K. Cho, J.Y. Hong, Y.W. Cho, J.W. Roh, G.H. Kim, J.H. Han, Y.S. Lee, J.Y. Cho, K.H. Lee*, J.Y. Suh*, **D.W. Chun***, “Real-time monitoring of the dehydrogenation behavior of a Mg₂FeH₆-MgH₂ composite by in situ transmission electron microscopy”, *Adv. Funct. Mater.*, 32, 39, 2009241 (2022)
4. G. Kim[‡], S. Lee[‡], S. Lee[‡], H.J. Yu, H. Cho, Y. Chung, T. Park, W. Shim, K.H. Lee, J. Y. Park, Yu Jin Kim*, **D.W. Chun***, W. Lee*, “Revealing the Substrate Constraint Effect on the Thermodynamic Behaviour of the Pd-H through Capacitive-based Hydrogen-Sorption Measurement”, *Adv. Mater.*, 202310333 (2024)

PUBLICATIONS AND SUBMITTED PUBLICATIONS (+IN PREPARATION)

1. J.Y. Hong[‡], J.H. Bae[‡], S. Kang, H. Jin, C. Kübel, C.Y. Son*, **D.W. Chun***, “Van der Waals force enabled 2D NaCl in graphene liquid cell” (to be submitted)
2. E. Lee[‡], H. Jin[‡], J. Jang, S. Kim, J. H. Park, D.W. Lee, J. Choi, J.K. Ryu, J. Kim, S.M. Kim, Y. Sung, K. Lee, D. Ahn, **D.W. Chun***, S.J. Yoo*, “Pseudomorphic transition to a metastable Ni₃Pt₅ intermetallic nanoalloy for fuel cells” (to be submitted)
3. J.Y. Hong[‡], J.Y. Kim[‡], J.H. Bae, H.N. Jin, K.H. Lee, Y.S. Lee*, **D.W. Chun***, “Revealing the Hidden Role of Radical Scavengers: Unraveling the Key to Tailoring the formation of hcp PdH_x phase in Graphene Liquid Cell”, *Adv. Funct. Mater.*, 2311293 (2024)
4. G. Kim[‡], S. Lee[‡], S. Lee[‡], H.J. Yu, H. Cho, Y. Chung, T. Park, W. Shim, K.H. Lee, J. Y. Park, Yu Jin Kim*, **D.W. Chun***, W. Lee*, “Revealing the Substrate Constraint Effect on the Thermodynamic Behaviour of the Pd-H through Capacitive-based Hydrogen-Sorption Measurement”, *Adv. Mater.*, 202310333 (2024)
5. W.K. Chae[‡], M.K. Jeong, D.G. Lee, J.B. Lee, **D.W. Chun**, S.Y. Lee, S.K. Hong, S.H. Kim, J.H. Han*, “Effects of pre/post-aging treatment on the mechanical properties and texture of asymmetrically rolled 6061 aluminum alloy: Formability and planar anisotropy”, *J. Mater. Res. Technol.*, 24, 9476-9490 (2023)
6. M.Y. Kim[‡], S.Y. Lee[‡], J.Y. Kim[‡], C.O. Park, W. Shi, H.G. Min, S.I. Kim, H.S. Kim, Y.S. Shim, B.Z. Lee, M.S. Choi, H.M. Jeong*, **D.W. Chun***, K.H. Lee*, “Generation of nanogaps on porous ZnO sheets via Li-ion implantation: NO₂ gas sensing with ultrafast recovery time”, *Sens. Actuator B-Chem.*, 379, 133283 (2023)
7. S.M. Lee[‡], S.H. Lee[‡], M.K. Lee, S.M. Rho, H.T. Kim, C.H. Won, K.R. Yoon, C.B. Kwon, J.Y. Kim, G.C. Park, J.H. Lim, J.S. Park, W.B. Kwon, Y.B. Park, **D.W. Chun**, H.J. Kim, T.Y. Lee*, “Tailored Self-Assembled Monolayer using Chemical Coupling for Indium–Gallium–Zinc Oxide Thin-Film Transistors: Multifunctional Copper Diffusion Barrier”, *ACS Appl. Mater. Interfaces*, 14, 50, 56310-56320 (2022)
8. T.L. Nguyen[‡], T.N. Vo[‡], V.D. Phung, K. Ayalew, **D.W. Chun**, A. Tuyen Luu, Q.H. Nguyen, K. J Kim, I.T. Kim*, J.Y. Moon*, “Li-ion storage in orthorhombic hydrated sodium molybdate with oxygen-vacancy defects”, *Chem. Eng. J.*, 446, 137174, (2022)

9. C.H. Won[‡], U.J. Jeong[‡], S.H. Lee[‡], M.K. Lee, C.B. Kwon, S.J. Cho, K.R. Yoon, S.M. Lee, **D.W. Chun**, I.J. Cho*, T.Y. Lee*, “Mechanically Tissue-Like and Highly Conductive Au Nanoparticles Embedded Elastomeric Fiber Electrodes of Brain–Machine Interfaces for Chronic In Vivo Brain Neural Recording”, *Adv. Funct. Mater.*, 2205145 (2022)
10. J.Y. Kim[‡], J.O. Fadonougbo[‡], J.H. Bae, M.K. Cho, J.Y. Hong, Y.W. Cho, J.W. Roh, G.H. Kim, J.H. Han, Y.S. Lee, J.Y. Cho, K.H. Lee*, J.Y. Suh*, **D.W. Chun***, “Real-time monitoring of the dehydrogenation behavior of a Mg₂FeH₆-MgH₂ composite by in situ transmission electron microscopy”, *Adv. Funct. Mater.*, 32, 39, 2009241 (2022)
11. J.Y. Hong[‡], J.H. Bae[‡], H.S. Jo, H.Y. Park, S.H. Lee, S.J. Hong, H.J. Chun, M.K. Cho, J.Y. Kim, J.D. Kim, Y.J. Son, H.N. Jin, J.Y. Suh, S.C. Kim, H.K. Roh, K.H. Lee, H.S. Kim, K.Y. Chung, C.W. Yoon, K.R. Lee, S.H. Kim, J.P. Ahn, H.S. Baik, G.H. Kim, B.C. Han, S.H. Jin, T.H. Hyeon, J.W. Park, C.Y. Son*, Y.S. Yang*, Y.S. Lee*, S.J. Yoo*, **D.W. Chun***, “Metastable Hexagonal Close-Packed Palladium Hydride in Liquid Cell TEM”, *Nature*, 603, 631-636 (2022)
12. I.Y. Kim, **D.W. Chun**, S.I. Kim, J.H. Lim, “Enhanced Thermoelectric Properties of Composites Prepared With Poly(3,4-Ethylenedioxythiophene) Poly(Styrenesulfonate) and Vertically Aligned Se Wire”, *Frontiers in Chemistry*, 9, 791155 (2022)
13. M.S. Choi[‡], M.Y. Kim[‡], A. Mirzaei, H.S. Kim, S.I. Kim, S.H. Baek, **D.W. Chun***, C.H. Jin*, K.H. Lee*, “Selective, sensitive, and stable NO₂ gas sensor based on porous ZnO nanosheets”, *Appl. Surf. Sci.*, 568, 150910 (2021)
14. M.S. Choi[‡], J.H. Ahn[‡], M.Y. Kim, A. Mirzaei, S.M. Choi, **D.W. Chun***, C.H. Jin*, K.H. Lee*, “Changes in the crystal structure of SnO₂ nanoparticles and improved H₂S gas-sensing characteristics by Al doping”, *Appl. Surf. Sci.*, 565, 150493 (2021)
15. J.W. Kim, S.H. Youn, J.Y. Baek, D.H. Kim, S.M. Kim, W.Y. Lee, H.J. Park, J.Y. Kim, **D.W. Chun**, S.S. Park, J.W. Roh, J.M. Kim, “Modulation of Conductivity and Contact Resistance of RuO₂ Nanosheets via Metal Nano-Particles Surface Decoration”, *Nanomaterials*, 11, 9, 2444, (2021)
16. S.H. Gong[‡], J.H. Lee, **D.W. Chun**, J.H. Bae, S.C. Kim, S.H. Yu, S. Nahm, H.S. Kim*, “Effects of Cr doping on structural and electrochemical properties of Li₄Ti₅O₁₂ nanostructure for sodium-ion battery anode”, *J. Energy Chem.*, 59, 465-472 (2021)
17. T.L. Nguyen[‡], V.D. Phung, K. Ayalew, **D.W. Chun**, I.T. Kim, K.J. Kim, J.Y. Moon*, “Tailored synthesis of molybdenum-selenide/selenium/sodium-molybdate hybrid composites as a promising anode for lithium-ion and sodium-ion batteries”, *Chem. Eng. J.*, 415, 128813 (2021)
18. M.W. Son[‡], J.W. Jang[‡], G.H. Kim, J.H. Lee, **D.W. Chun**, J.H. Bae, I.S. Kim, M.H. Ham, S.S. Chee*, “Large-Area Bernal-Stacked Bilayer Graphene Film on a Uniformly Rough Cu Surface via Chemical Vapor Deposition”, *ACS Appl. Electron. Mater.*, 3, 6, 2497-2503 (2021)
19. S.H. Lee[‡], J.Y. Jung[‡], I.J. Jang, D.I. Choi, M.J. Lee, D.W. Lee, J.H. Jang, J.H. Lee, H.N. Jin, K.M. Im, E.J. Lee, S.H. Kim, N.D. Kim, S.H. Lee, Y.S. Kang, H.Y. Park, **D.W. Chun**, H.C. Ham, K.S. Lee, D.C. Ahn*, P. Kim*, S.J. Yoo*, “Anion Constructor for Atomic-Scale Engineering of Antiperovskite Crystals for Electrochemical Reactions”, *Adv. Funct. Mater.*, 31, 16, 2009241 (2021)
20. J.M. Byun[‡], H.H. An, J.Y. Hong, **D.W. Chun**, J.Y. Moon*, “Thermoelectric performance of n-type polycrystalline SnSe with surface depletion by pressureless sintering”, *Appl. Surf. Sci.*, 544, 148834 (2021)
21. M.Y. Kim[‡], **D.W. Chun**[‡], R. Hasan, S.I. Kim, J.H. Lim, S.M. Choi, H.S. Kim, K*.H. Lee*, “Control of Cu-doping behavior in n-type Cu_{0.01}Bi_{1.99}Te_{2.7}Se_{0.3} polycrystalline bulk via fabrication technique change”, *J. Mater. Res. Technol.-JMRT*, 14, 765-771 (2021)

22. C.B. Kwon[‡], D.H. Seong, J.D. Ha, **D.W. Chun**, J.H. Bae, K.R. Yoon, M.K. Lee, J.H. Woo, C.H. Won, S.M. Lee, Y.F. Mei, K.I. Jang, D.H. Son*, T.Y. Lee*, “Self-Bondable and Stretchable Conductive Composite Fibers with Spatially Controlled Percolated Ag Nanoparticle Networks: Novel Integration Strategy for Wearable Electronics”, *Adv. Funct. Mater.*, 30, 49, 2005447, (2020)
23. H.K. Kim[‡], H.Y. Ha, J.H. Bae, M.K. Cho, J.Y. Kim, J.W. Han, J.Y. Suh, G.H. Kim, T.H. Lee, J.H. Jang, **D.W. Chun***, “Nanoscale light element identification using machine learning aided STEM-EDS”, *Sci Rep*, 10, 1, 1-12, (2020)
24. J.H. Kim[‡], C.U. Jang[‡], X.F. Wang, J.P. Paglione, S.M. Hong, S.R. Sayed, **D.W. Chun**, D.H. Kim*, “Electrical detection of the inverse Edelstein effect on the surface of SmB₆”, *Phys. Rev. B*, 102, 5, 05441 (2020)
25. T.K. Kim[‡], J.H. Bae, J.Y. Kim, M.K. Cho, Y.C. Kim, S.H. Jin, **D.W. Chun***, “Curved structure of Si by improving etching direction controllability in magnetically guided metal-assisted chemical etching”, *Micromachines*, 11, 8, 744, (2020)
26. S. Mortazavian[‡], E. R. Bandala, J.H. Bae, **D.W. Chun**, J.Y. Moon*, “Assessment of p-nitroso dimethylaniline (pNDA) suitability as a hydroxyl radical probe: investigating bleaching mechanism using immobilized zero-valent iron nanoparticles”, *Chem. Eng. J.*, 385, 123748, (2020)
27. S.S. Chee[‡], W.J. Lee, Y.R. Jo, M.K. Cho, **D.W. Chun**, H.S. Baik, B.J. Kim, M.H. Yoon*, K.Y. Lee*, M.H. Ham*, “Atomic vacancy control and elemental substitution in a monolayer molybdenum disulfide for high performance optoelectronic device arrays”, *Adv. Funct. Mater.*, 30, 11, 1908147, (2020)
28. T.K. Kim[‡], J.H. Bae, J.Y. Kim, Y.C. Kim, S.H. Jin, **D.W. Chun***, “Bulk Micromachining of Si by Annealing-Driven Magnetically Guided Metal-Assisted Chemical Etching”, *ACS Appl. Electron. Mater.*, 2, 1, 260-267, (2020)
29. H.J. Moon[‡], J.M. Kim[‡], **D.W. Chun**, S.K. Hong, Y.S. Yoon*, W.Y. Lee*, “Radial heterostructure and interface effects on thermoelectric transport properties of Bi/Sn and Bi/Sb core/shell nanowires”, *Curr. Appl. Phys.*, 20, 1, 43-48, (2020)
30. S. Mortazavian[‡], T. Jones-Lepp, J.H. Bae, **D.W. Chun**, E. R. Bandala, J.Y. Moon*, “Heat-treated biochar impregnated with zero-valent iron nanoparticles for organic contaminants removal from aqueous phase: Material characterizations and kinetic studies”, *J. Ind. Eng. Chem.*, 76, 197-214, (2019)
31. J.H. Bae[‡], T.K. Kim, H.M. Kim, J.Y. Hong, J.Y. Kim, M.K. Cho, G.H. Kim, H.Y. Ha, **D.W. Chun***, “Effect of Pt and FePt Layer Thickness on Microstructure and Magnetic Properties of L1₀ FePt Films With Perpendicular Anisotropy”, *IEEE Trans. Magn.*, 55, 8, 1-6, (2019)
32. H.H. An[‡], M. Pusko, **D.W. Chun**, S.H. Park, J.Y. Moon*, “In-situ synthesis of flexible hybrid composite films for improved thermoelectric performance”, *Chem. Eng. J.*, 357, 547-558, (2019)
33. S. Mortazavian[‡], A. Saber, J.Y. Hong, J.H. Bae, **D.W. Chun**, N. Wong, D. Gerrity, J. Batista, K.J. Kim, J.Y. Moon*, “Synthesis, characterization, and kinetic study of activated carbon modified by polysulfide rubber coating for aqueous hexavalent chromium removal”, *J. Ind. Eng. Chem.*, 69, 196-210 (2019)
34. S. Mortazavian[‡], H.H. An, **D.W. Chun**, J.Y. Moon*, “Activated carbon impregnated by zero-valent iron nanoparticles (AC/nZVI) optimized for simultaneous adsorption and reduction of aqueous hexavalent chromium: Material characterizations and kinetic studies”, *Chem. Eng. J.*, 353, 781-795, (2018)
35. H.Y. Ha[‡]*, T.H. Lee, J.H. Bae, **D.W. Chun**, “Molybdenum effects on pitting corrosion resistance of FeCrMnMoNC austenitic stainless steels”, *Metals*, 8, 8, 653, (2018)
36. J.M. Kim[‡], M.W. Oh, G.S. Kim, J.H. Bahk, J.Y. Song, S.G. Jeon, **D.W. Chun**, J.H. Bae, W.Y. Shim*, W.Y. Lee*, “Strain-engineered allotrope-like bismuth nanowires for enhanced thermoelectric performance”, *Acta Mater.*, 144, 145-153, (2018)

37. **D.W. Chun**, T.K. Kim, D. Choi, E. Caldwell, Y.J. Kim, J.C. Paik, S. Jin, R. Chen, “Vertical Si nanowire arrays fabricated by magnetically guided metal-assisted chemical etching”, *Nanotechnology*, 27, 45, 455302, (2016)
38. T.K. Kim, C. S Rustomji, H.M. Cho, **D.W. Chun**, J.Y. Jung, E. Caldwell, Y.J. Kim, J.H. Han, S.H. Jin, “Multi-wall carbon nanotube-embedded lithium cobalt phosphate composites with reduced resistance for high-voltage lithium-ion batteries”, *Electron. Mater. Lett.*, 12, 147-155, (2016)
39. C.H. Liu, Y.J. Kim, **D.W. Chun**, G.W. Kim, R. Chen, W.Y. Anthony, S.H. Jin, “Universal solders for direct bonding and packaging of optical devices”, *Mater. Lett.*, 152, 232-236, (2015)
40. T.K. Kim, B. VanSaders, J.Y. Moon, T.W. Kim, C.H. Liu, J. Khamwannah, **D.W. Chun**, D.Y. Choi, A. Kargar, R.K. Chen, Z.W. Liu, S.H. Jin, “Tandem structured spectrally selective coating layer of copper oxide nanowires combined with cobalt oxide nanoparticles”, *Nano Energy*, 11, 247-259, (2015)
41. T.K. Kim, J.Y. Moon, B. VanSaders, **D.W. Chun**, C. J Gardner, J.Y. Jung, G.Wang, R.K. Chen, Z.W. Liu, Y. Qiao, S.H. Jin, “Si boride-coated Si nanoparticles with improved thermal oxidation resistance”, *Nano Energy*, 9, 32-40, (2014)
42. S.M. Kim, **D.W. Chun**, J.J. Lee, W.Y. Jeung, “The Influence of Substrate Bias on the Texture Control and Performance of CrV Underlayer for L₁₀FePt Thin Films”, *IEEE Trans. Magn.*, 50, 9, 1-5, (2014)
43. S.H. Kim, S. Kwak, S.I. Han, **D.W. Chun**, K.H. Lee, J. Kim. J.H. Lee, “Nanofluidic Sustainable Energy Conversion Using a 1D Nanofluidic Network”, *Journal of Nanoscience and Nanotechnology*, 14, 3786-3789 (2014)
44. D.G. Lee, J.H. Han, J.W. Lee, W. Choi, Y.K. Yoo, J.S. Kim, K.S. Hwang, T.S. Kim, **D.W. Chun**, Y.C. Kim, K.H. Lee, J.H. Lee, “Tb_{0.3}Dy_{0.7}Fe_{1.9}/PbZr_{0.52}Ti_{0.48}O₃ Micro-Bridge on SiN_x Thin Film for Low Frequency Magnetic Sensing Applications”, *Jpn. J. Appl. Phys.*, 52, 10S, 10MC10, (2013)
45. **D.W. Chun**, S.H. Kim, H.W. Song, S.M. Kwak, Y.C. Kim, H.G. Seok, S.M. Lee, J.H. Lee, “Fast myoglobin detection using nanofluidic electrokinetic trapping technique”, *Appl. Phys. Express*, 6, 1, 017001, (2013)
46. D.G. Lee, S.M. Kim, Y.K. Yoo, J.H. Han, D.W. Chun, Y.C. Kim, J. Kim, K.S. Hwang, T.S. Kim, W.W. Jo, H. Kim, S.H. Song, J.H. Lee, “Ultra-sensitive magnetoelectric microcantilever at a low frequency”, 101, 18 (2012)
47. H.S. Kim, J.S. Noh, J.W. Roh, **D.W. Chun**, S.M. Kim, S.H. Jung, H.K. Kang, W.Y. Jeong, W.Y. Lee, “Perpendicular magnetic anisotropy in FePt patterned media employing a CrV seed layer”, *Nanoscale Res. Lett.*, 6, 1-6, (2011)
48. J.S. Noh, H.S. Kim, **D.W. Chun**, W.Y. Jeong, W.Y. Lee, “Hyperfine FePt patterned media for terabit data storage”, *Curr. Appl. Phys.*, 11, 4, S33-S35, (2011)
49. S.M. Kim, **D.W. Chun**, J.J. Lee, W.Y. Jeung, “Effect of the TiN content in the Pd–TiN seed layer on the microstructure and magnetic properties of Co/Pd multilayered media”, *J. Appl. Phys.*, 109, 7, 07B723, (2011)
50. S.M. Kim, **D.W. Chun**, J.J. Lee, W.Y. Jeung, “The Effects of the Pd-TiN Seed Layer on the Magnetic Properties of Co/Pd Multilayered Media”, *IEEE Trans. Magn.*, 46, 6, 1715-1717, (2010)
51. **D.W. Chun**, S.M. Kim, G.H. Kim, W.Y. Jeung, “The effects of CrV underlayer on the structure and magnetic properties of FePt thin film”, *IEEE Trans. Magn.*, 46, 6, 1856-1858, (2010)
52. **D.W. Chun**, S.M. Kim, G.H. Kim, W.Y. Jeung, “Effect of Sn addition on the microstructure and magnetic properties of FePt thin film”, *J. Appl. Phys.*, 105, 7, 07B731, (2009)
53. **D.W. Chun**, S.M. Kim, G.H. Kim, W.Y. Jeung, “Improvement of Magnetic Properties and Texture of FePt Thin Films on MgO Substrates by Sn Addition”, *J. Magn.*, 14, 1, 7-10, (2009)

54. H.K. Kim, **D.W. Chun**, J.H. Han, K.B. Kim, W.Y. Jeung, “Effects of external magnetic field on magnetic properties and surface morphology of electrodeposited CoFeNi alloys”, *Phys. Status Solidi A-Appl. Res.*, 204, 12, 4104-4107, (2007)
55. S.H. Park, **D.W. Chun**, J.H. Han, Y.H. Kim, W.Y. Jeung, “Giant magnetoimpedence effects in micro-patterned $\text{Co}_{52}\text{Fe}_{32}\text{B}_{11}\text{Si}_5$ amorphous ribbons”, *Phys. Status Solidi A-Appl. Res.*, 204, 12, 4071-4074, (2007)
56. C.B. Park, D.H. Kim, **D.W. Chun**, J.H. Han, H.J. Choi, W.Y. Jeung, “Soft magnetic properties of patterned Co-based amorphous wires with various dimensions”, *Phys. Status Solidi C-Current Topics in Solid State Physics*, 4, 12 (2007)
57. **D.W. Chun**, K.S. Hwang, K.H. Eom, J.H. Lee, B.H. Cha, W.Y. Lee, D.S. Yoon, T.S. Kim, “Detection of the Au thin-layer in the Hz per picogram regime based on the microcantilevers”, *Sens. Actuator A-Phys.*, 135, 2, 857-862, (2007)
58. K.S. Hwang, K. Eom, J.H. Lee, D.W. Chun, B.H. Cha, D.S. Yoon, T.S. Kim, J.H. Park, “Dominant surface stress driven by biomolecular interactions in the dynamical response of nanomechanical microcantilevers” 89, 17 (2006)

PATENTS

1. "Palladium hydride having hcp crystal structure and preparation method thereof" USA 11,608,276 (2023) / South Korea 10-2359658 (2022)
2. "In-situ coin cell supporting device for raman spectrum analysis" South Korea 10-2077725 (2020)
3. "Layered FeAs, method of preparing same, and FeAs nanosheet exfoliated from same" USA 11,060,167 (2021) / China ZL201910420863.7 (2022) / South Korea 10-2072672
4. "Cooling device utilizing thermoelectric and magnetocaloric mechanisms for enhanced cooling applications" USA 15/290,947 (2017)

SELECTED PRESENTATION

1. BK-21 Seminar, “Discovery of Metastable Metal-Hydrides Based on Radiation Chemistry & Direct Observation of Nanocrystals via In-situ TEM”, Chemistry Department, Pohang University of Science and Technology (POSTECH), Pohang, South Korea, Feb. 2024
2. BK-21 Seminar, “Novel Metal-hydride Phase Discovery Through In-situ Characterization”, Department of Advanced Materials Science & Engineering, Sungkyunkwan University, Suwon, South Korea, Jan. 2024
3. Graduate Colloquium, “Understanding Hydrogen in Metal Through In-situ Characterization”, Graduate Institute of Ferrous & Eco Materials Technology, Pohang University of Science and Technology (POSTECH), South Korea, Nov. 2023
4. Institute Colloquium, “Metastable Phase Discovery in Graphene Liquid Cell TEM”, Institute of Nanotechnology, Karlsruhe Institute of Technology, Germany, Oct. 2023
5. Department Colloquium, “Discovering & Understanding Metal-Hydrides: Introducing New Metastable PdH Phase & Revealing Hydrogen-Sorption in Metal-Hydrides through In-Situ Characterization”, Department of Materials Science & Engineering, Pohang University of Science and Technology (POSTECH), South Korea, Sep. 2023
6. Department Colloquium, “Discovering and Unraveling Hydrogen Sorption Kinetics of Metal Hydrides through In-Situ TEM & Introducing KIST's entrepreneurial activities”, Department of Materials Science & Engineering, Korea University, South Korea, Sep. 2023
7. Korean Society of Metals and Materials 2023 Spring, “New Synthetic Pathway for Hydrogen Energy Materials based on Radiation Chemistry”, Jeju, South Korea, Apr. 2023

8. E-Journal Club, “Metastable hcp PdH_x in Liquid Cell TEM”, Online Lecture, Feb. 2023 (<https://www.youtube.com/watch?v=WWxmO54pynQ>)
9. Department Colloquium, “Materials Discovery & Revealing H-sortion Kinetics by in-situ TEM”, Department of Advanced Materials Science & Engineering, Sungkyunkwan University, Suwon, South Korea, March 2023
10. Department Colloquium, “Materials Discovery in Liquid Cell TEM”, Chemistry Department, Pohang University of Science and Technology (POSTECH), Pohang, South Korea, May 2022
11. Department Colloquium, “Observation & Discovery of Metal-Hydrides by in-situ TEM”, Department of Advanced Materials Science & Engineering, Ulsan National Institute of Science & Technology (UNIST), Ulsan, South Korea, May 2022
12. Nano Convergence Conference 2021, “HCP Palladium Hydride in Liquid Cell TEM”, Online Conference, Jan. 2021
13. The Minerals, Metals & Materials Society (TMS) Conference 2020 Spring, “Unconventional Sodium Chloride in Graphene Liquid Cell”, San Diego, USA, Feb. 2020
14. Materials Research Society (MRS) Conference 2019 Fall, “Hexagonal Palladium Hydride in Graphene Liquid Cell”, Boston, USA, Dec. 2019