

Curriculum Vitae

Chun, Dong Won, Ph. D.

Korea Institute of Science and Technology (KIST),

Center for Energy Materials Research

E-mail : chundream98@kist.re.kr

Mobile : 82-10-6382-0965

EDUCATION

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|-------------|---|
| 1998 - 2005 | B. S. Metallurgical Engineering, Yonsei University, Seoul, Korea |
| 2005 - 2007 | M. S. Metallurgical Engineering, Yonsei University, Seoul, Korea
<i>Advisor: Wooyoung Lee</i> |
| 2013 - 2016 | Ph. D. Materials Science & Engineering, University of California San Diego,
San Diego, California, U.S.A
<i>Advisor: Sungho Jin</i> |

POSITIONS AND EMPLOYMENT

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| 2007 - 2012 | Research Scientist , Korea Institute of Science and Technology (KIST), Seoul, Korea |
| 2016 - 2021 | Senior Researcher , Advanced Analysis Center, Korea Institute of Science and
Technology (KIST), Seoul, Korea |
| 2021 - Present | Senior Researcher , Center for Energy Materials Research, Clean Energy Institute, Korea
Institute of Science and Technology (KIST), Seoul, Korea |

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.E. 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 Transmission Electron Microscopy", *Nature* (in revision)
2. 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 $\text{Li}_4\text{Ti}_5\text{O}_{12}$ nanostructure for sodium-ion battery anode", *J. Energy Chem.*, **59**, 465-472 (2021)
3. 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)
4. 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 SnO_2 nanoparticles and improved H_2S gas-sensing characteristics by Al doping", *Appl.*

Surf. Sci., 150493 (2021)

5. 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.*, (2021)
6. 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.E. 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)
7. 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)
8. 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)
9. 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)
10. 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**, 05441 (2020)
11. 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)
12. 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)
13. 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)
14. 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)
15. 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)
16. 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 32005, (2019)
17. 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)
18. 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)
 19. 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)
 20. 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)
 21. 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)
 22. 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)
 23. **D.W. Chun***, T.K. Kim, D.Y. Choi, E. Caldwell, Y.J. Kim, J.C. Paik, S.H. Jin, R.K. Chen, "Vertical Si nanowire arrays fabricated by magnetically guided metal-assisted chemical etching", *Nanotechnology*, **27**, 45 455302, (2016)