

Hern Kim
Professor / PhD
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Education

1991	Ph.D.	University of Houston, Texas, U.S.A.	Chemical Engineering
1984	M.S.	Seoul National University, Seoul, Korea	Chemical Engineering
1982	B.S.	Seoul National University, Seoul, Korea	Chemical Engineering

Professional Position

1994 – present	Professor	Myongji University, Yongin, Korea
2000 – 2001	Visiting Professor	University of Washington, Seattle, U.S.A.
1991 – 1994	Senior Researcher	SK Chemical Company, Suwon, Korea
1984 – 1986	Researcher	Korea Institute of Science and Technology, Seoul, Korea

Research Interest

Synthesis of advanced materials (including nano/micro composite particles, fibers, films, etc.) and their applications to a variety of fusion (energy/environment/chemical/bio/nano) technologies:

☐ Advanced materials processing

- Advanced membranes for pervaporation, microfiltration, ultrafiltration, forward osmosis, reverse osmosis
- New ionic liquids for biorefinery and organic synthesis
- Metal suboxides and their application for functional additives
- Hydrogen storage materials and related technology
- Functional photocatalysts and their applications in environmental control
- Hybrid composite materials for water disinfection
- Chemical sensors using semiconducting metal oxides for environmental detection
- Magnetic microcarriers for diagnosis and purification
- Functional organic/ceramic/metallic porous media and foams
- Biocompatible polymers and their applications
- Nanomaterials in electrochemical biosensors for food analysis
- Novel materials for food technology applications including active and intelligent food packaging
- Functional nanoparticles, colloids, emulsion for electronic use
- Functional nanocatalysts for environmental control/energy use
- Molecular simulations for functional materials design

☐ Emerging technology for sustainable environment and energy

- Design of novel processes for environmental and energy applications
- Computer aided process design and synthesis for fusion technology
- Reuse of waste materials via thermal decomposition and biotreatment

CURRENT FUNDED PROJECTs

- 2021-2022 ***Thermally activated delayed fluorescence (TADF) polymers via photoinduced organocatalytic living radical polymerization for solution-processed organic light-emitting diodes (OLEDs)***, National Research Foundation (Korea-Belarus Joint Research Program) funded by the Ministry of Science and ICT, South Korea. \$82,000 (2 years)
- 2020-2029 ***Development of innovation technology for higher value-added recycling of environmental solid wastes (Environmental Waste Recycle Institute)***, National Research Foundation (Priority Research Institute Program) funded by the Ministry of Education, South Korea. \$5.67million (9 years)
- 2020-2023 ***Development and applications of environmental indicator plant-like smart chromic films : Multienvironmental stimuli-responsive chromic devices with analog/digital compatibility***, National Research Foundation (NRF) (Mid-Career Researcher Program) funded by the Ministry of Science and ICT, South Korea. \$460,000 (3 years)
- 2020-2023 ***Development of MOF derived hierarchical electrocatalysts for zinc-air battery self-powered full water splitting system***, National Research Foundation (General Research Program) funded by the Ministry of Education, South Korea. \$130,000 (3 years), with Dr. Harsharaj Jadhav
- 2017-2021 ***Advanced track for energy and environment fusion CCS (Carbon Capture and Storage) innovation technology***, Korea Institute of Energy Technology Evaluation and Planning (KETEP) (Advanced Track Program) funded by the Ministry of Trade, Industry & Energy (MOTIE), South Korea. \$1.77million (5 years)
- 2019-2022 ***Single layer multi-response smart window for climate adaptable solar modulation***, National Research Foundation (General Research Program) funded by the Ministry of Education, South Korea. \$130,000 (3 years), with Dr. John Marc Puguan
- 2019-2022 ***Applications of novel ferrite-transition metal oxide heterostructural electrocatalyst to multiple-wastewater treatment***, National Research Foundation (General Research Program) funded by the Ministry of Education, South Korea. \$130,000 (3 years), with Dr. Richard Appiah-Ntiamoah

Finished Funded Projects

- 2013-2020 ***Development of energy and environment fusion technology based on organic solid waste***, National Research Foundation (BK21Plus Program) funded by the Ministry of Education, South Korea. \$1.73million (7 years)
- 2018-2019 ***Highly efficient conversion of carbon dioxide into carbonates based on superporous nanocomposites***, National Research Foundation (General Research Program) funded by the Ministry of Education, South Korea. \$43,000 (1 year).
- 2017-2018 ***Amphiphilic fluorogenic fluoride ion sensing and detecting system***, National Research Foundation (General Research Program) funded by the Ministry of Education, South Korea. \$43,000 (1 year).
- 2009-2018 ***Biorefinery of Biomass into chemicals and fuels (Energy/Environment Fusion Technology Center (E2FTC))***, National Research Foundation (Priority Research Institute Program) funded by the Ministry of Science, ICT and Future Planning, South Korea. \$3.84million (9 years)
- 2014-2017 ***Development of ionic liquid supported nanocomposites for simultaneous capture and conversion of carbon dioxide***, National Research Foundation (Mid-Career Researcher Program) funded by the Ministry of Science, ICT and Future Planning, South Korea. \$260,000 (3 years)
- 2013-2015 ***Development of green plastics, rubbers and drug-delivery systems derived from renewable natural resources***, National Research Foundation (Korea-Belarus International Research & Development Program) funded by the Ministry of Science, ICT and Future Planning, South Korea. \$68,000 (2 years)
- 2011-2014 ***Development of high-efficient/low-cost functional materials for water purification***, National Research Foundation (Korea-Africa International Research & Development Program) funded by the Ministry of Science, ICT and Future Planning, South Korea. \$90,000 (3 years)
- 2013-2014 ***Development of technology for complex waste reuse***, Small and Medium Business Administration of Korea (Industry-University Cooperation Program) funded by the Ministry of Trade, Industry and Energy, South Korea. \$86,000 (1 year)
- 2010-2013 ***Development of new ionic liquids for lignocellulose biomass processing***, Korea Research Institute of Chemical Technology funded by the Ministry of Knowledge Economy, South Korea. \$76,000 (3 years)

- 2010-2013 **Development of direct osmosis membrane/module system for osmotic power generation**, National Research Foundation (General Research Program) funded by the Ministry of Education, South Korea. \$128,000 (3 years)
- 2009-2012 **Physico-chemical capture and biological fixation of carbon dioxide**, National Research Foundation (General Research Program) funded by the Ministry of Education, South Korea. \$128,000 (3 years)
- 2007-2009 **Development of functional PVDF membranes by physical and chemical modification**, EcoSTAR Project (with Kolon Co.) funded by the Ministry of Environment, South Korea. \$52,000 (2 years)
- 2007-2009 **Performance evaluation of hybrid scrubber/filtration system for air pollution control**, Core Environmental Technology R&D Project for Next Generation (with Mirae NET Co.) funded by Ministry of Environment, South Korea. \$68,000 (2 years)
- 2006-2007 **Development of advanced materials and processes for oil vapor removal**, Innovation Project, Small and Medium Business Administration (with Daesung Env. Eng. Co.) funded by the Ministry of Trade, Industry and Energy, South Korea. \$68,000 (2 years)
- 2006-2007 **Performance evaluation of PVDF braid hollow fiber membranes**, EcoSTAR Project, Ministry of Environment (with Kolon Co.), South Korea. \$52,000 (2 years)
- 2004-2006 **Development of membranes and modules for water purification**, EcoSTAR Project (with Kolon Co., SK Chemical Co., Saehan Co.) by the Ministry of Environment, South Korea. \$1.2million (1.5 years)
- 2004-2006 **Development of fine particulate collection equipment using ceramic cake**, Core Environmental Technology R&D Project for Next Generation (with Daesung Env. Eng. Co.) by the Ministry of Environment, South Korea. \$68,000 (2 years)

RECENT PUBLICATION (2007 ~ present)

Submitted - SCI

1. H.S. Jadhav, H.A. Bandal, R. Ramakrishna, **Hern Kim**, Critical review, recent updates on zeolitic imidazolate framework-67 (ZIF-67) and its derivatives for electrochemical water splitting, *Advanced Materials* (submitted 2021 Sept). SCI IF=30.588
2. J.M. Puguán, P. Rathod, **Hern Kim**, Achieving transmissive-to-black chromism via engineered dual electro-thermo-responsive single-molecule, *Advanced Optical Materials* (submitted 2021 Oct). SCI IF=9.926
3. R. Appiah-Ntiamoah, A.F. Baye, **Hern Kim**, Nafion-interfaced bimetallic oxide heterojunction nanoparticles@N(S)-doped porous carbon with physicochemical synergism ideal for trace-level electrochemical dopamine detection, *Journal of Colloid and Interface Science* (submitted 2021 Aug). SCI IF=8.128
4. R. Appiah-Ntiamoah, A.F. Baye, **Hern Kim**, Multinary ZnO-ZnFe₂O₄/Fe₃O₄/N(S)-doped carbon nanocomposite derived from adsorption-sludge with physicochemical properties conducive for trace-level dopamine electroanalysis in urine, *Electrochimica Acta* (submitted 2021 Sept). SCI IF=6.901
5. H.A. Bandal, A.A. Pawar, **Hern Kim**, Facile transformation of waste onion skins into Fe₃C@C/carbon sheet for electrocatalytic oxygen evolution reaction, *Applied Surface Science* (submitted 2021 Sept). SCI IF=6.707
6. V.G. Deonikar, **Hern Kim**, A synergistic and unique corrosive/non-corrosive integrated impacts of waste recycled and activated multi-Al composites for enhanced hydrogen generation: Insights on structural, physical properties and hydrolysis mechanism, *Applied Surface Science* (submitted 2021 Sept). SCI IF=6.707
7. A. Rajkamal, **Hern Kim**, The formation of pillar-ion in the Li layer decreasing Li/Ni disorder and improving the structural stability of cation doped Ni-rich LiNi_{0.8}Co_{0.1}Mn_{0.1}O₂: A first-principles verification, *ACS Applied Energy Materials* (submitted 2021 Sept). SCI IF=6.024
8. A.G. Pornea, J.L. Ruello, J.M. Puguán, **Hern Kim**, Sustainable fabrication of multifunctional dual-pore network aerogel composite material for broadband sound absorption, thermal insulation, and fire repellent application, *ACS Applied Materials & Interfaces* (in revision 2021 Sept). SCI IF=9.229
9. J.L. Ruello, A.G. Pornea, J.M. Puguán, **Hern Kim**, Ecological assembly of a multifunctional composite fibrous panel with dual-pore network from milled corrugated box wastes for efficient ultra-wideband acoustic absorption, *ACS Materials Letters* (submitted 2021 Sept). SCI IF=8.312
10. A.A. Pawar, **Hern Kim**, Sustainable approach for paper waste aerogel preparation without any pretreatment for effective and versatile oil absorbent, *Waste Management* (2021 Sept). SCI IF=7.145

11. E.C. Escobar, J.E.L. Sio, R.E.C. Torrejos, **Hern Kim**, G.M. Nisola, W.J. Chung, Organic ligands for the development of adsorbents for Cs⁺ sequestration: A review, *Journal of Industrial and Engineering Chemistry* (submitted 2021 March). SCI IF=6.064 co-author
12. B.Z. Desalegn, **Hern Kim**, J.G. Seo, Synergistically Interfaced Bifunctional Transition Metal Selenides for High-Rate Hydrogen Production Via Urea Electrolysis, *ChemCatChem* (submitted 2021 July). SCI IF=8.928 co-author
13. R.Q. Raguindin, **Hern Kim**, M.N. Gebresillase, J.G. Seo, Yolk-Shell Nickel-Cobalt Phosphides as Bifunctional Catalysts in the Solvent-Free Hydrogenation of Levulinic Acid to gamma-Valerolactone, *ACS Sustainable Chemistry & Engineering* (submitted 2021 Sept). SCI IF=8.198 co-author

In revision / Accepted / In print - SCI

1. D. Prasad, K.N. Patil, N.K. Chaudhari, **Hern Kim**, B.M. Nagaraja, A.H. Jadhav, Paving way for sustainable earth-abundant metal based catalysts for chemical fixation of CO₂ into epoxides for cyclic carbonate formation, *Catalysis Reviews – Science and Engineering* (in print 2020 Nov). DOI:10.1080/01614940.2020.1812212 SCI IF=20.217 co-author
2. E.C. Escobar, J.E.L. Sio, R.E.C. Torrejos, **Hern Kim**, G.M. Nisola, W.J. Chung, Preparation and evaluation of epoxy resins for the selective removal of Cs⁺ in high-level liquid waste, *Desalination and Water Treatment* (accepted 2021 Sept). SCI IF=1.254 co-author

Published - SCI

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226. E.C. Escobar, J.E.L. Sio, K.J. Parohinog, A. Rajkamal, **Hern Kim**, W.J. Chung, G.M. Nisola, Hyper-crosslinked tetraphenylborate as a regenerable sorbent for Cs⁺ sequestration in aqueous media through cation- π interaction, *Chemosphere* 288, 132501 (2022 Feb 1). DOI:10.1016/j.chemosphere.2021.132501 SCI IF=7.086 co-author
225. R. Appiah-Ntiamoah, **Hern Kim**, Electrochemically engineered zinc(iron)oxyhydroxide/zinc ferrite heterostructure with interfacial microstructure and hydrophilicity ideal for supercapacitors, *Journal of Colloid and Interface Science* 606, 607-617 (2022 Jan 15). 10.1016/j.jcis.2021.08.053 SCI IF=8.128
224. M.W. Abebe, **Hern Kim**, Methylcellulose/Tannic acid complex particles coated on alginate hydrogel scaffold via Pickering for removal of methylene blue from aqueous and quinoline from non-aqueous media, *Chemosphere* 286, 131597 (2022 Jan 1). DOI:10.1016/j.chemosphere.2021.131597 SCI IF=7.086

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223. A.F. Baye, D.H. Han, S.K. Kassahun, R. Appiah-Ntiamoah, **Hern Kim**, Improving the reduction and sensing capability of Fe₃O₄ towards 4-nitrophenol by coupling with ZnO/Fe₃C/graphitic carbon using ZnFe-LDH@carbon as a template, *Electrochimica Acta* 398, 139343 (2021 Dec. 1). 10.1016/j.electacta.2021.139343 SCI IF=6.901
222. P. More, P. Rathod, J.M. Puguán, **Hern Kim**, All-in-one display device with multicolor states derived from NBU-3 MOF/monoalkylated viologen hybrid ionogel material, *Dyes and Pigments* 195, 109730 (2021 Nov 1). 10.1016/j.dyepig.2021.109730 SCI IF=4.889
221. H.S. Jadhav, **Hern Kim**, J.G. Seo, Constructive designing of ternary metal oxide as an anode material for high performance lithium-ion batteries, *International Journal of Energy Research* 45, 16592–16602 (2021 Sept. 1). DOI:10.1002/er.6905 SCI IF=5.164 co-author
220. G.T. Gebremichael, **Hern Kim**, G.M. Nisola, W.J. Chung, Asparagine anchored on mesoporous silica for Au (III) capture: elucidation of adsorption-reduction mechanisms and their implications towards selective Au (III) recovery, *Applied Surface Science* 567, 150743 (2021 Nov. 30). DOI:10.1016/j.apsusc.2021.150743 SCI IF=6.707 co-author
219. J.M. Puguán, P.V. Rathod, **Hern Kim**, Engineered ionene/PNIPAM hybrid dual-response material generating tunable and unique optical modes for adaptive solar transmittance modulation, *ACS Applied Materials & Interfaces* 13(30), 36330–36340 (2021 July 26). DOI:10.1021/acsami.1c09561 SCI IF=9.229
218. R.G. Mujmule, H.S. Arvind, **Hern Kim**, Synergetic effect of ZnCo₂O₄/Inorganic salt as a sustainable catalyst system for CO₂ utilization, *Journal of Environmental Management* 298, 113433 (2021 Nov 1). 10.1016/j.jenvman.2021.113433 SCI IF=6.789
217. A.A. Pawar, A. Kim, **Hern Kim**, Synthesis and performance evaluation of plastic waste aerogel as sustainable and reusable oil absorbent, *Environmental Pollution* 288, 117717 (2021 Nov 1). DOI:10.1016/j.envpol.2021.117717 SCI IF=8.071

216. S.K. Kassahun, Z. Kiflie, **Hern Kim**, A.F. Baye, Process Optimization and Kinetics Analysis for Photocatalytic Degradation of Emerging Contaminant using N-doped TiO₂- SiO₂ nanoparticle: Artificial Neural Network and Surface Response Methodology Approach, *Environmental Technology & Innovation* 23, 101761 (2021 Aug 1). DOI:10.1016/j.eti.2021.101761 SCI IF=5.263 co-author
215. P.V. Rathod, P.P. More, J.M.C. Puguán, **Hern Kim**, Phase changing poly(ionic liquid) with electrolytic functionality for a single-layer ionogel-based smart window with thermo- and electro-dual response, *Solar Energy Materials and Solar Cells* 230, 111202 (2021 Sept 15). DOI:10.1016/j.solmat.2021.111202 SCI IF=7.267
214. R.E.C. Torrejosa, E.C. Escobarae, J.W. Han, S.H. Min, H.W. Yook, K.J. Parohinog, S.H. Koo, **Hern Kim**, G.M. Nisola, W.J. Chung, Multidentate thia-crown ethers as hyper-crosslinked macroporous adsorbent resins for the efficient Pd/Pt recovery and separation from highly acidic spent automotive catalyst leachate, *Chemical Engineering Journal* 424, 130379 (2021 Nov 15). DOI:10.1016/j.cej.2021.130379 SCI IF=13.273 co-author
213. J.M. Puguán, P.V. Rathod, P. More, **Hern Kim**, Highly soluble electroactive ethylenedioxythiophene (EDOT)-based copolymer obtained via ‘click’ copolymerization, *Polymer* 226, 123846 (2021 June 4). DOI:10.1016/j.polymer.2021.123846 SCI IF=4.430
212. P.V. Rathod, J.M.C. Puguán, **Hern Kim**, Self-bleaching dual responsive poly(ionic liquid) with optical bistability toward climate-adaptable solar modulation, *Chemical Engineering Journal* 422, 130065 (2021 Oct. 15). DOI:10.1016/j.cej.2021.130065 SCI IF=13.273
211. K.K. Reddy, K.Y. Goud, M. Satyanarayana, S. Kummari, V.S. Kumar, H. Bandal, T. Jayaramudu, R.D. Pyarasani, **Hern Kim**, J. Amalraj, K.V. Gobi, Metal oxide-metal nanocomposite-modified electrochemical sensors for toxic chemicals, in A. Pandikumar, P. Ramshkumar (eds.), *Metal Oxides in Nanocomposite Based Electrochemical Sensors for Toxic Chemicals*, Chapter 4. pp.100-159, ISBN: 978-0-12-820727-7, Elsevier, 2021. Book Chapter DOI:10.1016/B978-0-12-820727-7.00001-X
210. J.L.A. Ruello, **Hern Kim**, Fabrication of lightweight and robust cryogel with opposite wettability for effective oil-water separation via sustainable and toxic-free approach, *Journal of Environmental Chemical Engineering* 9, 105477 (2021 Aug 1). DOI:10.1016/j.jece.2021.105477 SCI IF=5.909
209. D.N. Mengesha, R. Appiah-Ntiamoah, **Hern Kim**, Azo-dye derived oxidised-nitrogen rich carbon sheets with high adsorption capability for dye effluent, *Chemosphere* 279, 130463 (2021 Sept. 1). DOI:10.1016/j.chemosphere.2021.130463 SCI IF=7.086
208. K.Y. Goud, K.K. Reddy, A. Khorshed, V.S. Kumar, R.K. Mishra, M. Oraby, A.H. Ibrahim, **Hern Kim**, K.V. Gobi, Electrochemical Diagnostics of Infectious Viral Diseases: Trends and Challenges, *Biosensors and Bioelectronics* 180, 113112 (2021 May 15). DOI:10.1016/j.bios.2021.113112 SCI IF=10.618
207. B. Shinde, S. Kamble, H. Jadhav, P. Mane, K. Khude, **Hern Kim**, B. Karale, A. Burungale, ‘In water’ exploration of Alpinia zerumbet-fabricated CuO NPs in the presence of NaPTS at room temperature: green synthesis of 1,8-dioxooctahydroxanthene derivatives, *Research on Chemical Intermediates* 47, 1221–1237 (2021 Jan 4). DOI:10.1007/s11164-020-04351-0 SCI IF=2.914 co-author
206. A.G.M. Pornea, **Hern Kim**, Design and synthesis of SiO₂/TiO₂/PDA functionalized phase change microcapsules with enhanced localized surface heating effect and visible light irradiation for efficient solar energy storage, *Energy Conversion and Management* 232, 113801 (2021 March 15). DOI:10.1016/j.enconman.2020.113801 SCI IF=9.709
205. V.G. Deokinar, J.M. Puguán, **Hern Kim**, Ag nanoparticles embedded defective tungsten oxide hydrate thin films for the enhanced electrochromic performance: Insights on the physico-chemical properties and localized surface plasmon resonance mechanism, *Acta Materialia* 207, 116693 (2021 April 1). DOI:10.1016/j.actamat.2021.116693 SCI IF=8.947
204. A. Tamboli, N. Suzuki, C. Terashima, S. Gosavi, **Hern Kim**, A. Fujishima, Direct dimethyl carbonates synthesis over CeO₂ and evaluation of catalyst morphology role in catalytic performance, *Catalysts* 11, 223 (2021 Feb 8). DOI:10.3390/catal11020223 SCI IF=4.146
203. H.G. Zeweldi, A. Bendoy, M.J. Park, H.K. Shon, H.S. Kim, E.M. Johnson, **Hern Kim**, W.J. Chung, G.M. Nisola, Supramolecular host-guest complex of methylated β -cyclodextrin with polymerized ionic liquid ([vbim]TFSI)_n as highly effective and energy-efficient thermo-regenerable draw solutes in forward osmosis, *Chemical Engineering Journal* 411, 128520 (2021 May 1). DOI:10.1016/j.cej.2021.128520 SCI IF=13.273 co-author
202. A. Pawar, H.A. Bandal, **Hern Kim**, Spinel type Fe₃O₄ polyhedron supported on nickel foam as an electrocatalyst for water oxidation reaction, *Journal of Alloys and Compounds* 863, 158742 (2021 May 15) DOI:10.1016/j.jallcom.2021.158742 SCI IF=5.316
201. E.C. Escobarab, E.L. Sioa, A.P. Bendoy, R.E.C. Torrejos, H.T. Fissaha, **Hern Kim**, W.J. Chung, G.M. Nisola, Removal of Cs⁺ in water by dibenzo-18-crown-6 ether tethered on mesoporous SBA-15 as a

reusable and efficient adsorbent, *Journal of Water Process Engineering* 39, 101716 (2021 Feb 1). DOI:10.1016/j.jwpe.2020.101716 SCI IF=5.485 co-author

200. B.T. Gadisa, A.F. Baye, R. Appiah-Ntiamoah, **Hern Kim**, ZnO@Ni foam photoelectrode modified with heteroatom doped graphitic carbon for enhanced photoelectrochemical water splitting under solar light, *International Journal of Hydrogen Energy* 46, 2075-2085 (2021 Jan 6). DOI:10.1016/j.ijhydene.2020.10.094 SCI IF=5.816
199. H.S. Jadhav, A. Roy, D.C.M. Tiongco, **Hern Kim**, J.G. Seo, Growth of binder free mesoporous 3D-CuCo₂O₄ electrocatalysts with high activity and stability for electro-oxidation of methanol, *Ceramics International* 47, 3322-3328 (2021 Feb 2). DOI:10.1016/j.ceramint.2020.09.173 SCI IF=4.527 co-author
198. D. Prasad, K.N. Patil, **Hern Kim**, B.M. Nagaraja, A.H. Jadhav, Basicity controlled MgCo₂O₄ nanostructures as catalyst for viable fixation of CO₂ into epoxides at atmospheric pressure, *Chemical Engineering Journal* 405, 126907 (2021 Feb 1). DOI:10.1016/j.cej.2020.126907 SCI IF=13.273 co-author
197. H.G. Zeweldi, A.P. Bendoy, M.J. Park, H.K. Shon, E.M. Johnson, H.S. Kim, **Hern Kim**, W.J. Chung, G.M. Nisola, Forward osmosis with direct contact membrane distillation using tetrabutylphosphonium p-toluenesulfonate as an effective and safe thermo-recyclable osmotic agent for seawater desalination, *Chemosphere* 263, 128070 (2021 Jan 1). DOI:10.1016/j.chemosphere.2020.128070 SCI IF=9.501 co-author

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196. L. Limjoco, H. Fissaha, **Hern Kim**, G.M. Nisola, W.J. Chung, Sulfur co-polymerization with hydrophilic co-monomer as polysulfides in microbeads for a highly efficient Hg²⁺ removal from wastewater, *ACS Applied Polymer Materials* 2, 4677-4689 (2020 Sep. 2). DOI:10.1021/acsapm.0c00725 SCI IF=4.089 co-author
195. M.N. Gebresillase, R.Q. Raguindin, **Hern Kim**, J.G. Seo, Supported bimetallic catalysts for the solvent-free hydrogenation of levulinic acid to γ -valerolactone: Effect of metal combination (Ni-Cu, Ni-Co, Cu-Co), *Catalysts* 10, 1354 (2020 Nov 21). DOI:10.3390/catal10111354 SCI IF=4.146 co-author
194. P.V. Rathod, J.M. Puguang, **Hern Kim**, Cu nanoparticles immobilized on biomass-derived carbon as a catalyst for the solvent-free synthesis of propargylamines via A³ coupling reaction and organic pollutant degradation, *Applied Organometallic Chemistry* 34, e5986 (2020 Dec 1). DOI:10.1002/aoc.5986 SCI IF=4.105
193. A.F. Baye, R. Appiah-Ntiamoah, J. Amalraj, R.K. Koteswara, **Hern Kim**, Gallium-doped FeSe₂-functionalized graphene oxide composite with ideal electronic structure and stability as dopamine electrochemical sensor, *Electrochimica Acta* 363, 137245 (2020 Dec 10). DOI:10.1016/j.electacta.2020.137245 SCI IF=6.901
192. H.G. Zeweldi, A.P. Bendoy, M.J. Park, H.K. Shon, H.S. Kim, E.M. Johnson, **Hern Kim**, S.P. Lee, W.J. Chung, G.M. Nisola, Tetrabutylammonium 2,4,6-trimethylbenzenesulfonate as an effective and regenerable thermo-responsive ionic liquid drawing agent in forward osmosis for seawater desalination, *Desalination* 495, 114635 (2020 Dec. 1) DOI:10.1016/j.desal.2020.114635 SCI IF=9.501 co-author
191. S.K. Kassahun, Z. Kiflie, **Hern Kim**, B.T. Gadisa, Effects of operational parameters on bacterial inactivation in Vis-LEDs illuminated N-doped TiO₂ based photoreactor, *Journal of Environmental Chemical Engineering* 8, 104374 (2020 Oct 1). DOI:10.1016/j.jece.2020.104374 SCI IF=5.909 co-author
190. R. Appiah-Ntiamoah, A.F. Baye, **Hern Kim**, In-situ electrochemical formation of core-shell ZnFe₂O₄@Zn(Fe)OOH heterostructured catalyst for efficient water oxidation in alkaline medium, *ChemElectroChem* 7, 3478-3486 (2020 Aug 17). DOI:10.1002/celec.202000834 SCI IF=4.590
189. V.G. Deonikar, S. Rathod, V. Kulkarni, **Hern Kim**, Fabrication and characterizations of structurally engineered lanthanum substituted nickel-cobalt ferrites for the analysis of electric and dielectric properties, *Inorganic Chemistry Communications* 119, 108074 (2020 Sept. 1). DOI:10.1016/j.inoche.2020.108074 SCI IF=2.495
188. R.K. Koteswara, H. Bandal, M. Satyanarayana, Y.K. Yugender, V.K. Gobi, J. Tippabattini, J. Amalraj, **Hern Kim**, Recent trends in electrochemical sensors for vital biomedical markers using hybrid nanostructured materials, *Advanced Science* 7, 1902980 (2020 July 1). DOI:10.1002/advs.201902980 SCI IF=16.806
187. M.W. Abebe, R. Appiah-Ntiamoah, **Hern Kim**, Gallic acid modified alginate self-adhesive hydrogel for strain responsive transdermal delivery, *International Journal of Biological Macromolecules* 163, 147-155 (2020 Nov 15). DOI:10.1016/j.ijbiomac.2020.06.257 SCI IF=6.953
186. G.R.M. Tomboc¹, B.T. Gadisa¹, J. Joo, **Hern Kim***, K.Y. Lee*, Hollow structured metal sulfide based-semiconductor for photocatalytic hydrogen generation, *ChemNanoMat* 6, 850-869 (2020 June 1). DOI:10.1002/cnma.202000125 SCI IF=3.154
185. G.R.M. Tomboc¹, B.T. Gadisa¹, M. Jun, N.K. Chaudhari*, **Hern Kim***, K.Y. Lee*, Carbon-transition metal oxide electrodes: Understanding the role of surface engineering for high energy density

supercapacitors, *Chemistry-An Asian Journal* 15, 1628–1647 (2020 June 2). DOI:10.1002/asia.202000324 SCI IF=4.568

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