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Education

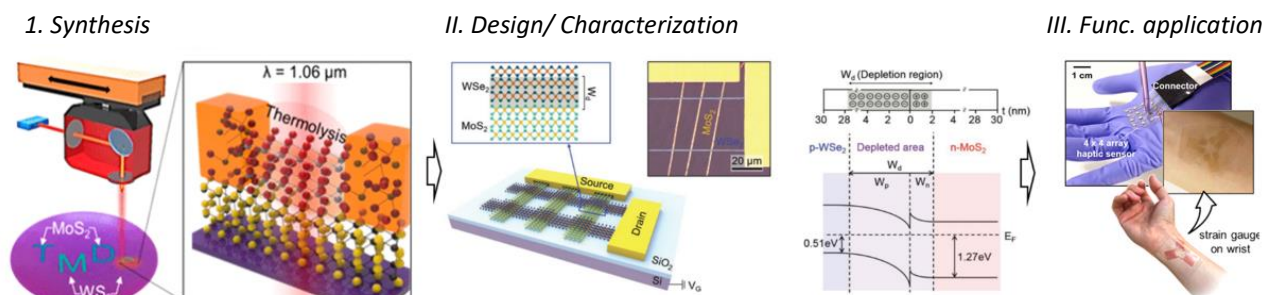
- **Ph.D.**, School of Advanced Materials Science and Engineering, (Mar. 2010 - Feb. 2014)
Sungkyunkwan University, Suwon, Korea
Thesis: **Graphene based Flexible Field Effect Transistors using Printable Gate Dielectrics.**
- **B.S.**, School of Advanced Materials Science and Engineering, (Mar. 2004 - Feb. 2010)
Sungkyunkwan University, Suwon, Korea

Carriers

- **Assistant Professor** (Mar. 2021 – Current)
School of Materials Science and Engineering
Pusan National University
- **Senior Research Scientist** (Mar. 2016 – Feb. 2021)
Institute of Advanced Composite Materials
Korea Institute of Science and Technology
- **Post Doc. Research Follow** (Mar. 2015 – Feb. 2016)
Department of Chemistry, Smalley Institute for Nanoscale Sci. & Tech.,
Rice University, Houston, TX, USA
- **Post Doc. Research Follow** (Mar. 2014 - Feb. 2015)
School of Electrical and Electronic Engineering
Yonsei University, Seoul, Korea

Research field

- **Synthesis and modification of 2D crystal (Graphene, MoS₂, WS₂, etc.)**
 - Chemical vapor deposition & solution-based thermolysis method.
 - Crystal structure control of 2D material
- **Design and characterization of 2D semiconductor-based heterojunction**
 - Analysis of junction property with electrical measurement
- **Development of Functional Nanomaterial based Sensor & Logic device**
 - Skin-attachable device for a wearable sensor (strain & gas sensor)
 - Advanced optoelectronic sensor system.



Awards and Honors

- (2023) Outstanding Research Award, Korean Welding and Joining Society
- (2021) Outstanding Young Researcher Award, Korean Graphene Society
- (2021) Outstanding Research Award, The Korean Vacuum Society
- (2021) Best Research Team, Korea Institute of Science and Technology (KIST)
- (2020) Best Research Team, Korea Institute of Science and Technology (KIST)
- (2019) Best Research Staff, Korea Institute of Science and Technology (KIST)
- (2018) Unsung Hero Award, Korea Institute of Science and Technology (KIST)

Publications

102. S.-I. Kim, J.-Y. Moon, S.-K. Hyeong, S. Ghods, J.-S. Kim, J.-H. Choi, D. S. Park, S. Bae, S. H. Cho*, **S.-K. Lee***, J.-H. Lee* "Float-stacked graphene-PMMA laminate" *Nature commun.* 15, 2172 (2024)
101. J. W. An, S.-K. Hyeong, K. Min Kim, H. R. Lee, J. Park, T.-W. Kim, S. Bae* and **S.-K. Lee*** "Facile Synthesis of Laser-Induced Graphene Oxide and its Humidity Sensing Properties" *Carbon* 34, 1173 (2023)
100. J.A. Lee, J. Yoon, S. Hwang, H. Hwang, J.D. Kwon, **S.-K. Lee***, Y. Kim* "Integrated Logic Circuits Based on Wafer-Scale 2D-MoS2 FETs Using Buried-Gate Structures" *Nanomaterials* 13, 2870 (2024)
99. M.J. Jeon, S.-K. Hyeong, H.Y. Jang, J. Mun, T.W. Kim, S. Bae*, **S.-K. Lee*** "Selective Laser-Assisted Direct Synthesis of MoS₂ for Graphene/MoS₂ Schottky Junction" *Nanomaterials* 13 (22), 2937 (2023)
98. B.J. Moon, Y.S. Song, D. Son, H.Y. Yang, S. Bae, **S.-K. Lee**, S.H. Lee, T.W. Kim* "Implementation of Photosynaptic and Electrical Memory Functions in Organic Nano-Floating-Gate Transistors via a Perovskite-Nanocrystal-Based Nanocomposite Tunneling Layer" *Small Science* 3 (9), 2300068 (2023)
97. C. Yu, D.Q. Gbadago, S.-K. Hyeong, **S.-K. Lee**, S. Hwang, N. Shin* "Optimized Substrate Orientations for Highly Uniform Metal Halide Perovskite Film Deposition" *ACS Appl. Mat. Int.* 15 (37), 43822-43834 (2023)
96. T.W. Park, Y.L. Kang, E.B. Kang, H. Jung, **S.-K. Lee**, G.T. Hwang, J.W. Lee, S.-Y. Choi, S. , S.-H. Kwon*, K. H. Kim*, W. I. Park* "Direct Printing of Ultrathin Block Copolymer Film with Nano-in-Micro Pattern Structures" *Advanced Science* 10 (29), 2303412 (2023)
95. D. Choi, J.W. Seo, J. Yoon, S.M. Yu, J.D. Kwon, **S.-K. Lee***, Y. Kim* "Monolithic Integration of Semi-Transparent and Flexible Integrated Image Sensor Array with a-IGZO Thin-Film Transistors (TFTs) and pin Hydrogenated Amorphous Silicon Photodiodes" *Nanomaterials* 13 (21), 2886 (2023)
94. M.J. Ahemad, S.-K. Hyung, H.Y. Yang, M. Im, E. Lee, J.H. Choi, T.W. Kim, **S.-K. Lee**, B. J. Moon, S. Bae* "In-situ Synthesis of Pd/WO₃ Nanocomposites for Low-Temperature Hydrogen Gas Sensing" *Appl. Sci. Conv. Tech.* 32 (4), 100-103 (2023)
93. D.-H. Cho, S. Park, B. Im, Y. Kim, S.-W. Kim, **S.-K. Lee**, D. Byun* "Eco-friendly mass production of MoS₂ flakes in pure water for performance enhancement of triboelectric nanogenerator" *Appl. Sur. Sci.* 625(15), 157235 (2023)
92. J. Han, K. Kim, M. Tavakkoli, J. Lee, D. Kim, I. Chung, A. Lee, K. Park, Y. Liao, J.-W. Lee, **S.-K. Lee**, J.-W. Oh, H.

- Sung*, E. Kauppinen*, I. Jeon* "Upcycled synthesis and extraction of carbon-encapsulated iron carbide implementation of nanoparticles for gap Plasmon applications in perovskite solar cells" *EcoMat* 5(6), e12342 (2023)
91. J.W. An, H. J. Kim, **S.-K. Lee** * "Review on Functionalization of Laser-Induced Graphene" *J.Korean Inst. Electr. Electron. Mater. Eng.* 36(3) 203-213 (2023)
 90. J. Ryu, S. Shim, J. Song, J. Park, H. Kim, **S.-K. Lee**, J. C. Shin, J. Mun*, S.-W. Kang* "Effect of Measurement System Configuration and Operating Conditions on 2D Material-Based Gas Sensor Sensitivity" *Nanomaterials* 13(3) 573 (2023)
 90. J.-Y. Moon, D.-H. Kim, S.-I. Kim, H.-S. Hwang, J.-H. Choi, S.-K. Hyeong, S. Ghods, H. G. Park, E.-T. Kim, S. Bae, **S.-K. Lee**, S.-K. Son*, J.-H. Lee* "Layer-engineered atomic-scale spalling of 2D van der Waals crystals" *Matter* 5(11) 3935 (2022)
 90. H. K. Choi, S. Bae, **S.-K. Lee**, S. H. Lee, K. Lee, S.-Y. Ko, J.-W. Kang, S.-Y. Yang, T.-W. Kim "Tailoring the internal structure of porous copper film via size-controlled copper nanosheets for electromagnetic interference shielding" *Materials Science and Engineering: B* 278, 115611 (2022)
 89. B. Park, Y. Hwang, O. Kwon, S. Hwang, J. A. Lee, D. H. Choi, **S.-K. Lee**, A. R. Kim, B. Cho, J.-D. Kwon*, J. I. Lee*, Y. Kim "Robust 2D MoS₂ Artificial Synapse Device Based on a Lithium Silicate Solid Electrolyte for High-Precision Analogue Neuromorphic Computing" *ACS Appl. Mat. Inter.* 14(47) 53038-53047 (2022)
 88. H. K. Choi, D. S. Lee, S. Bae, B. J. Moon, **S.-K. Lee**, T.-W. Kim* "Recent Progress of Research into Conductive Nanomaterials for Use in Electromagnetic Interference Shields" *Appl. Sci. Conv. Tech.*, 31(6), 120 (2022)
 87. H.-J Lee, L-Liu, W-J. Jeong, **S.-K. Lee***, B-K Ryu* "Characterization of Li_{1.5}Al_{0.5}Ge_{1.5}(PO₄)₃ Solid Electrolyte with an Added Sintering Aid" *Elec. Mater. Lett.* 19(1) 55-65 (2022)
 86. D. H. Shin, Y.-J. Kim, W. J. Yu, **S.-K. Lee***, S. Bae*, S. Ahn* "Atomically-Thin Alkane Passivation Layer for Flexible and Transparent Graphene Electronics" 621, 155695 (2022)
 85. S. Han, **S.-K. Lee** (co-first), J.-W. Kim, S. Bae, S.-H. Bae, K.-H. Choi, J. S. Kim* "Self-powered image array composed of touch-free sensors fabricated with semiconductor nanowires" *Mater. Horiz.* 9, 2846-2853 (2022)
 84. S. Gravelins, M. J. Park, M. Niewczasz, S.-K. Hyeong, **S.-K. Lee**, A. Ahmed*, A.-A. Dhirani* "Large emergent optoelectric enhancement in cross-linked nanoparticle nanosheets" *Comm. Chem.* 5, 103 (2022)
 83. H. Jang, H. Hinton, W.-B. Jung, M.-H. Lee, C. Kim, M. Park, **S.-K. Lee**, S. Park, D. Ham* "In-sensor optoelectronic computing using electrostatically doped silicon" *Nat. Elec.* 5, 519 (2022)
 82. M. J. Im, S.-K. Hyeong, T.-W. Kim, **S.-K. Lee**, G. Y. Jung*, S. Bae* "High uniformity and stability of graphene transparent conducting electrodes by dual-side doping" *Appl. Surf. Sci.* 605, 154569 (2022)
 81. J.-S Lee, A. J. Woo, S. Bae*, **S.-K. Lee*** "Review of Hydrogen Gas Sensors for Future Hydrogen Mobility Infrastructure" *Appl. Sci. Conver. Technol.*, 3, 79-84 (2022)
 80. S. Hwang, Y. Hwang, B. Park, J. A. Lee, D.-H. Choi, A. R. Kim, **S.-K. Lee**, J.-D. Kwon*, S.-H. Kwon*, Y. Kim* "A Facile Approach towards Wrinkle-Free Transfer of 2D-MoS₂ Films via Hydrophilic Si₃N₄ Substrate" *Appl. Surf. Sci.* 604, 154523 (2022)
 79. S. Hwang, M. Kang, A. Lee, S. Bae, **S.-K. Lee**, S. H. Lee, T. Lee, G. Wang and T.-W. Kim* "Integration of multiple electronic components on a microfiber toward emerging electronic textile platform" *Nat. Comm.*, 13, 3173 (2022)
 78. S. J. Kim, J. M. Lee, S. G. Jo, E. B. Lee, **S.-K. Lee**, J. W. Lee* "Recent Research Trend of Supercapacitor and Chemical Sensor using Composite of ZIF-8 and Carbon-based Material" *J.Surf. Sci. Eng.*, 55, 2, (2022)
 77. S. Park, J. K. Song, T. K. Kim, K.-H. Choi, S.-K. Hyeong, M. Ahn, H. R. Kim, S. Bae, **S.-K. Lee***, B. H. Hong* "Photothermally Crumpled MoS₂ Film as an Omnidirectionally Stretchable Platform" *Small Methods*, 6, 2200116

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76. S. Han, S.-K. Hyeong, **S.-K. Lee***, N. Shin* "Sequential Surface Passivation for Enhanced Stability of Vapor-deposited Methylammonium Lead Iodide Thin Films" *Chem. Eng. Jour.*, 439, 135715 (2022)
75. B. Im, **S.-K. Lee**, G. Kang, J. Moon, D. Byun*, D.-H. Cho* "Electrohydrodynamic jet printed silver-grid electrode for transparent raindrop energy-based triboelectric nanogenerator" *Nano Energy*, 9, 107049 (2022)
74. S.-K. Hyeong, M. Park, S.-I. Kim, S. Park, K.-H. Choi, M. J. Im, N. D. Kim, T.-W. Kim, S. H. Lee, J.-W. Park, S. Bae, J.-H. Lee*, **S.-K. Lee*** "Compacted Laser-Induced Graphene with Bamboo-Like Carbon Nanotubes for Transformable Capacitive Energy Storage Electrodes" *Adv. Mater. Tech.*, 7, 2101105 (2022)
73. D. H. Shin, S. Y. Park, C.-S. Yeo, Y. Y. Park, J. Y. Song, **S.-K. Lee**, T.-W. Kim, S. Bae*, B. H. Hong* "Fast and Complete Recovery of TMDs-Decorated rGO Fiber Gas Sensors at Room Temperature" *Appl. Surf. Sci.*, 578, 151832 (2022)
72. Y. Kim, S.-K. Hyeong, Y. Choi, **S.-K. Lee**, J.-H. Lee, H. K. Yu "Transparent and flexible electromagnetic interference shielding film using ITO nanobranches by internal scattering" *ACS Applied Materials & Interfaces* 13(51), 61413 (2021)
72. B. J. Moon, S. J. Kim, A. Lee, Y. Oh, **S.-K. Lee**, S. H. Lee, T.-W. Kim, B. H. Hong, S. Bae " Structure-controllable growth of nitrogenated graphene quantum dots via solvent catalysis for selective C-N bond activation" *Nat. Comm.*, 12, 5879 (2021)
71. Y.-O. Kim, B. J. Moon, A. Lee, J. I. Kim, **S.-K. Lee**, Y.-S. Lee, S. Bae, B. H. Hong, Y. C. Jung " Multifunctional Tyrosine-Immobilized PAH Molecule as a Universal Cathode Interlayer Enables High-Efficiency Inverted Polymer Solar Cells" *Adv. Optic. Mater.*, 9, 2101006 (2021)
70. G. Kim, S. An, S.-K. Hyeong, **S.-K. Lee**, M. Kim, N. Shin "In Situ Vapor-Phase Halide Exchange of Patterned Perovskite Thin Films" *Small*, 17, 2006737 (2021)
69. J. Yoon, U. Kim, Y. Yoo, J. Byeon, **S.-K. Lee**, J.-S. Nam, K. Kim, Q. Zhang, E. I. Kauppinen, S. Maruyama, P. Lee, I. Jeon "Foldable Perovskite Solar Cells Using Carbon Nanotube-Embedded Ultrathin Polyimide Conductor" *Adv. Sci.*, 8, 2004092 (2021)
68. S. Han, S. Noh, J.-W. Kim, C.-R. Lee, **S.-K. Lee**, and J. S. Kim*, Stretchable Inorganic GaN-Nanowire Photosensor with High Photocurrent and Photoresponsivity *ACS Appl. Mater. Inter.*, 13, 22728 (2021)
67. Seung-Il Kim, Seok-Ki Hyeong, Dong Seop Park, Sang-Hwa Hyun, Ji-Yun Moon, Sangyeob Lee, Tae-Sung Kim, **S.-K. Lee***, Jae-Hyun Lee*, and Keun Heo* "Performance enhancement of amorphous WO₃ assisted graphene-based electronic devices: Aspect of surface engineering" *Appl. Surf. Sci.*, 556, 149763 (2021)
66. H. Ryu, H. Rho, S. W. Lee, **S.-K. Lee**, H. Lee, S. Bae, T.-W. Kim, M. W. Cho, J.-S. Ha, S. H. Lee "Swift isotropic heat transport of 3D graphene platform-based metal-graphene composites" *Carbon* 183, 93-99 (2021)
65. M. Park, D.-M. Lee, M. Park, S. Park, D. S. Lee, T.-W. Kim, S. H. Lee, **S.-K. Lee**, H. S. Jeong, B. H. Hong, S. Bae "Performance enhancement of graphene assisted CNT/Cu composites for lightweight electrical cables" *Carbon* 179, 53-59 (2021)
64. M. J. Im, S.-K. Hyeong, M. Park, **S.-K. Lee**, T.-W. Kim, G. Y. Jung, S. Bae "Sandwich-Doping for a Large Schottky Barrier and Long-Term Stability in Graphene/Silicon Schottky Junction Solar Cells" *ACS Omega* 6, 5, 3973–3979 (2021)
63. H. K. Choi, A. Lee, D. S. Lee, S. Bae, **S.-K. Lee**, S. H. Lee, T. Lee, T.-W. Kim "Hierarchical porous foil with layer-by-layer assembly of 2D copper nanosheets for ultimate EMI shielding" *ACS Nano*, 15, 1, 829 (2021)
62. X. Li, **S.-K. Lee**, J. Sha, Y. Deng, Y. Zhao, R. Wang "In-situ growth of Fe nanoparticles encapsulated by carbon onions with controllable thickness on graphene nanoribbon-reinforced graphene" *Carbon*, 174, 423 (2021)
62. S.-W. Park, Y. J. Jo, S. Bae, B. H. Hong, **S.-K. Lee*** "Synthesis of Large-Scale Transition Metal Dichalcogenides for Their Commercialization" *Applied Science and Convergence Technology* 29(6) 133 (2020)

61. S. Han, S. Noh, Y.-T. Yu, C.-R. Lee, **S.-K. Lee**, and J. S. Kim* "Highly Efficient Photoelectrochemical Water Splitting Using GaN-Nanowire Photoanode with Tungsten Sulfides" *ACS Appl. Mater. Interf.*, 12, 52, 58028–58037 (2020)
60. K.-H. Choi, S. Park, S.-K. Hyeong, S. Bae, T.-W. Kim, S. H. Lee, S. Ryu*, **S.-K. Lee*** "Triboelectric Effect of Surface Morphology Controlled Laser Induced Graphene" *J. Mater. Chem. A*, 8, 19822-19832 (2020) (selected as cover)
59. S. Park, J. Park, Y.-G. Kim, S. Bae, T.-W. Kim, K.-I. Park, B. H. Hong, C. K. Jeong*, **S.-K. Lee*** "Laser-directed synthesis of strain-induced crumpled MoS₂ structure for enhanced triboelectrification toward haptic sensors" *Nano Energy*, 78, 105266 (2020)
58. S. Park, A. Lee, K.-H. Choi, S.-K. Hyeong, S. Bae, J.-M. Hong, T.-W. Kim, B. H. Hong*, **S.-K. Lee*** "Layer-Selective Synthesis of MoS₂ and WS₂ Structures under Ambient Conditions for Customized Electronics" *ACS Nano*, 14, 8487 (2020)
57. I. Yu, J. Ko, T.-W. Kim, D. S. Lee, N. D. Kim, S. Bae, **S.-K. Lee**, J. Choi, S. S. Lee, Y. Joo*, "Effect of sorted, homogeneous electronic grade single-walled carbon nanotube on the electromagnetic shielding effectiveness" *Carbon*, 167, 523 (2020)
56. S. Hwang, S. Jang, S. Bae, **S.-K. Lee**, S. H. Lee, S. Fabiano, M. Berggren, T. Lee, T.-W. Kim*, "All-Solid-State Organic Schmitt Trigger Implemented by Twin Two-in-One Ferroelectric Memory Transistors" *Adv. Electron. Mater.*, 6, 1901263 (2020)
55. D.-Y. Jeon*, D. H. Nam, D. S. Lee, **S.-K. Lee**, M. Park, S.G. Park, G.-T. Kim "Tuning the on/off current ratio in ionic-liquid gated multi-layer MoS₂ field-effect transistors" *J. Phys. D:Appl. Phys.*, 53, 275104 (2020)
54. A. Lee, **S.-K. Lee**, S. H. Lee* "Simultaneous Temperature and Strain Sensing with Hybrid Resonator of Fiber Bragg Grating and Whispering Gallery Resonator" *IEEE Sensors J.*, 20, 2962 (2020)
53. S. Han, I. Choi, C.-R. Lee, K.-U. Jeong, **S.-K. Lee**, J. S. Kim* "Fast Response Characteristics of Flexible Ultraviolet Photosensors with GaN Nanowires and Graphene" *ACS Appl. Mater. Interf.*, 12, 970 (2020)
52. M. Kang, A.-N. Cha, S.-A. Lee, **S.-K. Lee**, S. Bae, D.-Y. Jeon, J.-M. Hong, S. Fabiano, M. Berggren, T.-W. Kim*, "Light-sensitive charge storage medium with spironaphthooxazine molecule-polymer blends for dual-functional organic phototransistor memory" *Org. Elec.*, 78, 105554 (2020)
51. J.-B. Lee, Y. R. Lim, A. K. Katiyar, W. Song, J. Lim, S. Bae, T.-W. Kim, **S.-K. Lee***, J.-H. Ahn*, "Direct Synthesis of a Self-Assembled WSe₂/MoS₂ Heterostructure Array and its Optoelectrical Properties" *Adv. Mater.* **2019**, 31, 1904194 (selected as cover)
50. M. Kang, S.-A. Lee, S. Jang, S. Hwang, **S.-K. Lee**, S. Bae, J.-M. Hong, S. H. Lee, K.-U. Jeong, J. A. Lim, T.-W. Kim*, "Low-Voltage Organic Transistor Memory Fiber with a Nanograined Organic Ferroelectric Film" *ACS Appl. Mater. Inter.* **2019**, 11, 22575
49. S.-Y. Cho, H. Yu, J. Choi, H. Kang, S. Park, J.-S. Jang, H.-J. Hong, I.-D. Kim, **S.-K. Lee***, H. S. Jeong*, H.-T. Jung*, "Continuous Meter-Scale Synthesis of Weavable Tunicate Cellulose/Carbon Nanotube Fibers for High-Performance Wearable Sensors" *ACS Nano* **2019**, 13, 9332–9341
48. B. J. Moon, S. J. Kim, S. Lee, A. Lee, H. Lee, D. S. Lee, T.-W. Kim, **S.-K. Lee**, S. Bae, S. H. Lee* "Rare-Earth-Element-Ytterbium-Substituted Lead-Free Inorganic Perovskite Nanocrystals for Optoelectronic Applications" *Adv. Mater.* **2019**, 31, 1901716
47. I. Yu, Y. Ye, S. Moon, **S.-K. Lee**, Y. Joo*, "A Bendable, Stretchable Transistor with Aligned Carbon Nanotube Films" *Adv. Mater. Interfaces* **2019**, 1900945
46. G. Kim, S. An, S.-K. Hyeong, **S.-K. Lee**, M. Kim*, N. Shin*, "Perovskite Pattern Formation by Chemical Vapor Deposition Using Photolithographically Defined Templates" *Chem. Mater.* **2019**, 31, 8212–8221
45. J. Cho, **S.-K. Lee**, S.-H. Eem, J. G. Jang, B. Yang*, "Enhanced mechanical and thermal properties of carbon fiber-reinforced thermoplastic polyketone composites" *Comp. Part A*, **2019**, 126, 105599

44. A. Lee, **S.-K. Lee**, S. H. Lee* "Simultaneous Temperature and Strain Sensing with Hybrid Resonator of Fiber Bragg Grating and Whispering Gallery Resonator" *IEEE Sensors J.* **2019**, 20, 2962
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42. S. Hwang, S. Jang, M. Kang, S. Bae, **S.-K. Lee**, J.-M. Hong, S. H. Lee, G. Wang, S. Fabiano, M. Berggren, T.-W. Kim, "Two-in-One Device with Versatile Compatible Electrical Switching or Data Storage Functions Controlled by the Ferroelectricity of P(VDFTrFE) via Photocrosslinking" *ACS Appl. Mater. Interfaces* **2019**, 11, 25358–25368
41. K.-H. Nam, A. Lee, **S.-K. Lee**, K. Hur, H. Han*, "Infrared Transmitting Polyimides Based on Chalcogenide Element-Blocks with Tunable High-refractive Indices and Broad Optical Windows" *J. Mater. Chem. C*, **2019**, 7, 10574
40. J. Mun, H. Park, J. Park, D. Joung, **S.-K. Lee**, J. Leem, J.-M. Myoung, J. Park, S.-H. Jeong, W. Chegal, S. Nam, S.-W. Kang, "High-Mobility MoS₂ Directly Grown on Polymer Substrate with Kinetics-Controlled Metal–Organic Chemical Vapor Deposition" *ACS Appl. Electron. Mater.* **2019**, 1, 608–616
39. Y. Ha, Y.-O. Kim., S. Ahn, **S.-K. Lee**, J.-S. Lee, M. Park, J. W. Chung, Y. C. Jung "Robust and stretchable self-healing polyurethane based on polycarbonate diol with different soft-segment molecular weight for flexible devices" *J.eurpolymj*, **2019**, 118, 26
38. J. Lee, S. Hwang, **S.-K. Lee**, S. Ahn, S. G. Jang, N.-H. You, C. B. Kim*, M. Goh* "Optimizing filler network formation in poly(hexahydrotriazine) for realizing high thermal conductivity and low oxygen permeation" *Polymer* **2019**, 179, 121639
37. C. Park*, **S.-K. Lee*** "Electrical Adaptiveness and Electromechanical Response in Gel Composites of Carbon Nanomaterials" *ChemElectroChem*, **2018**, 5, 3589
36. S. Han[±], **S.-K. Lee**[±], I. Choi, J. Song, C.-R. Lee, K. Kim, M.-Y. Ryu, K.-U. Jeoung, J. S. Kim* "Highly Efficient and Flexible Photosensors with GaN Nanowires Horizontally Embedded in a Graphene Sandwich Channel" *ACS Appl. Mater. Interfaces* **2018**, 10, 38173
35. J.-W. Lee, J. Han, D. S. Lee, S. Bae, S. H. Lee, **S.-K. Lee**, B. J. Moon, C.-J. Choi, G. Wang, T.-W. Kim "2D Single-Crystalline Copper Nanoplates as a Conductive Filler for Electronic Ink Applications" *Small*, **2018**, 14, 1703312
34. S. J. Kim, D. H. Shin, Y. S. Choi, H. Rho, M. Park, B. J. Moon, Y. Kim, **S.-K. Lee**, D. S. Lee, T.-W. Kim, S. H. Lee, K. S. Kim, B. H. Hong* S. Bae* "Ultrastrong Graphene-Copper Core-Shell Wires for High-Performance Electrical Cables" *ACS Nano*, **2018**, 12, 2803
33. M. Park, A. Lee, H. K. Rho, **S.-K. Lee**, S. Bae, D.-Y. Jeon, D. S. Lee, T.-W. Kim, Y.-H. Im, S. H. Lee* "Large area thermal light emission from autonomously formed suspended graphene arrays" *Carbon*, **2018**, 136, 217
33. J. Yoon, Y. Ji, **S.-K. Lee**, J. Hyon, J.M. Tour* "Low-Temperature-Processed SiO_x One Diode–One Resistor Crossbar Array and Its Flexible Memory Application" *Adv. Elec. Mater.* **2018**, 4, 1700665
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31. C. B. Kim, K. B. Jeong, B. J. Yang, J.-W. Song, B.-C. Ku, S. Lee, **S.-K. Lee***, C. Park* "Facile Supramolecular Processing of Carbon Nanotubes and Polymers" *Angew. Chem. Int. Ed.*, **2017**, 129, 16398 (selected as cover)
30. C. Gao, N. D. Kim, R. W. Salvatierra, **S.-K. Lee**, L. Li, Y. Li, J. Sha, G. A. L. Silva, H. Fei, E. Xie, J. M. Tour*

- "Germanium on seamless graphene carbon nanotube hybrids for lithium ion anodes" *Carbon*, **2017**, 123, 433
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