

DONGHEE SON

Assistant Professor

School of Electronic & Electrical Engineering, Sungkyunkwan University,
Center for Neuroscience Imaging Research, Institute for Basic Science (IBS),
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EDUCATION & HONORS

- Seoul National University** 08/28/2015
Doctor of Philosophy, Chemical and Biological Engineering
~ Advisor: **Prof. Dae-Hyeong Kim**
~ Thesis: “Non-volatile Memory Devices and Integrated Sensors
for Multifunctional Stretchable and Bioresorbable Electronics”
- Seoul National University** 02/26/2009
Master of Science, Interdisciplinary Program in Nanoscience and Technology
(Department of Physics & Astronomy)
~ Advisor: **Prof. Seunghun Hong**
~ Thesis: “Nanoscale Bio-sensor Probe for the Selective Detection of Calcium inside a Cell”
- Korea University** 02/24/2007
Bachelor of Science, Physics
- Sinyang Cultural Foundation, Sinyang Young Scholarship** 06/12/2015
- The Korean Academy of Science and Technology, 2018 Inter-Academy Seoul Science Forum (IASSF),
Rising Researcher (100 under the age of 35)** 09/21/2018
- The Korean Society of Industrial and Engineering Chemistry, Miwon Commercial Co., Ltd.,
Young Scientist** 10/31/2019

PROFESSIONAL EXPERIENCE

- SKKU, School of Electronic and Electrical Engineering** 09/01/2019 – Present
Assistant Professor
- KIST-Sungkyunkwan University, Carbon-Neutral Research Center** 03/01/2022 – 02/28/2025
Adjunct Professor
- KIST, Biomedical Research Institute, Center for Bionics** 08/01/2017 – 08/31/2019
Senior Research Scientist
- KIST-Yonsei University, College of Engineering** 04/16/2019 – 08/31/2019
Adjunct Professor

Stanford University, Chemical Engineering <i>Post-doctoral Research Fellow (Advisor: Prof. Zhenan Bao)</i>	06/14/2016-06/30/2017
Institute for Basic Science (IBS), Center for Nanoparticle Research <i>Post-doctoral Research Fellow (Advisor: Prof. Dae-Hyeong Kim)</i>	09/01/2015-06/12/2016
Seoul National University, Institute of Chemical Processes <i>Researcher (Advisor: Prof. Taeghwan Hyeon)</i>	2011-2012
R&D ReRAM Device Research, Hynix Semiconductor <i>Senior researcher</i>	02/09/2009-03/17/2011
Associate Editor, Flexible Electronics, Frontiers in Electronics	06/15/2022-Present
Guest Editor, Frontiers in Electronics <i>Special Issue: Synthesis, properties, and applications of self-healing polymers and composites</i>	10/31/2022-Present
Guest Editor, Gels <i>Special Issue: Recent Advances in Designing Hydrogels for Flexible Electronics and Devices</i>	01/18/2022-03/31/2023

AS FIRST & CORRESPONDING AUTHOR, ARTICLES PUBLISHED IN JOURNALS

"Highly tough and conductive hydrogel adhesive for interactive stretchable human-machine interfaces"

Kyuha Park⁺, Kyumin Kang⁺, Jungwoo Kim, Subin Jin, Mikyung Shin^{*}, and Donghee Son^{*}
ACS Applied Materials & Interfaces Accepted (2022)

"Vacuum-deposited stretchable polymer dielectric and its application to soft carbon nanotube electronics"

Ja Hoon Koo⁺, Juyeon Kang⁺, Sungjun Lee⁺, Jun-Kyul Song, Junhwan Choi, Jiyong Yoon, Sung-Hyuk Sunwoo, Sung-Hyuk Sunwoo, Dong Chan Kim, Wangwoo Nam, Dae-Hyeong Kim^{*}, Sung Gap Im^{*}, and Donghee Son^{*}
Nature Electronics Accepted (2022)

"Reversible electrical percolation in a stretchable and self-healable silver-gradient nanocomposite bilayer"

Jinhong Park⁺, Duhwan Seong⁺, Yongjun Park⁺, Sang Hyeok Park, Hyoung Won Baac, Mikyung Shin, Seunghyun Lee, Minbaek Lee^{*}, and Donghee Son^{*}
Nature Communications 13, 5233 (2022)

"Stretchable colour-sensitive quantum dot nanocomposites for shape-tunable multiplexed phototransistor arrays"

Jun-Kyul Song⁺, Junhee Kim⁺, Jiyong Yoon⁺, Ja Hoon Koo⁺, Kyumin Kang, Hyunjin Jung, Sung-Hyuk Sunwoo, Seungwon Yoo, Hogeun Chang, Jinwoung Jo, Woonhyuk Baek, Sanghwa Lee, Mikyung Shin, Taeghwan Hyeon^{*}, Dae-Hyeong Kim^{*}, and Donghee Son^{*}
Nature Nanotechnology 17, 849 (2022)

"Stretchable and Self-Healable Graphene-Polymer Conductive Composite for Wearable EMG Sensor"

Jihyang Song⁺, Yewon Kim⁺, Mikyung Shin^{*}, and Donghee Son^{*}

Polymers 14, 3766 (2022)

"PEDOT Composite with Ionic Liquid for Stretchable Electrochemical Transistor"

Sangkyu Lee⁺, Jaepyo Jang⁺, Sungjun Lee, Daekwang Jung, Mikyung Shin^{*}, and Donghee Son^{*}

Gels 8, 534 (2022)

"Soft Liquid Metal-Based Conducting Composite with Robust Electrical Durability for a Wearable Electrocardiogram Sensor"

Yewon Kim⁺, Jihyang Song⁺, Soojung An, Mikyung Shin^{*}, and Donghee Son^{*}

Polymers 14, 3409 (2022)

"Punicalagin-Loaded Alginate/Chitosan-Gallol Hydrogels for Efficient Wound Repair and Hemostasis"

Jaewon Ju, Jungwoo Kim, Yeonsun Choi, Subin Jin, Sumin Kim, Donghee Son^{*}, and Mikyung Shin^{*}

Polymers 14, 3248 (2022)

"Tyramine-Functionalized Alginate-Collagen Hybrid Hydrogel Inks for 3D-Bioprinting"

Sung Dong Kim, Subin Jin, Sumin Kim, Donghee Son^{*}, and Mikyung Shin^{*}

Polymers 14, 3173 (2022)

"Molecular rationale for the design of instantaneous, strain-tolerant polymeric adhesive in a stretchable underwater human-machine interface"

Yeonsun Choi⁺, Kyumin Kang⁺, Donghee Son^{*}, and Mikyung Shin^{*}

ACS Nano 16, 1368 (2022)

"Electrostatic-mechanical synergistic in situ multiscale tissue adhesion for sustainable residue-free bioelectronics interface"

Da Wan Kim⁺, Kang-Il Song⁺, Duhwan Sung, Yeon Soo Lee, Sangyul Baik, Jin Ho Song, Heon Joon Lee, Donghee Son^{*}, and Changhyun Pang^{*}

Advanced Materials, 34, 2105338 (2022)

Back Cover Article

"Tissue-adhesive, conductive, and injectable cellulose hydrogel ink for on-skin direct writing of electronics"

Subin Jin, Yewon Kim, Donghee Son^{*}, and Mikyung Shin^{*}

Gels 8, 336 (2022)

"Quantitative evaluation of line-edge roughness in various FinFET structures: Bayesian neural network with automatic model selection"

Sangho Yu, Sang Min Won, Hyong Won Baac, Donghee Son^{*} and Changhwan Shin^{*}

IEEE Access 10, 26340 (2022)

"Soft Stretchable Conductive Carboxymethylcellulose Hydrogels for Wearable Sensors"

Kyuha Park⁺, Heewon Choi⁺, Kyumin Kang, Mikyung Shin^{*} and Donghee Son^{*}

Gels 8, 92 (2022)

"Lead-Sealed Stretchable Underwater Perovskite-Based Optoelectronics via Self-recovering Polymeric Nanomaterials"

Jinhyun Kim, Duhwan Seong, Hannah Kwon, Subin Jin, Hyejun Kim, Kwanil Lee, Seok Joon Kwon, Mikyung Shin, Donghee Son^{*}, and In Soo Kim^{1,8*}

ACS Nano, 15, 20127 (2021)

"A bioinspired stretchable sensory-neuromorphic system"

Sun Hong Kim⁺, Geun Woo Baek⁺, Jiyong Yoon⁺, Seunghwan Seo, Jinhong Park, Donghyo Hahm, Jun Hyuk Chang, Duhwan Seong, Hyunseon Seo, Seyong Oh, Kyunghwan Kim, Heeyoung Jung, Youngsu Oh, Hyoung Won Baac, Batyrbek Alimkhanuly, Wan Ki Bae, Seunghyun Lee, Minbaek Lee, Jeonghun Kwak^{*}, Jin-Hong Park^{*} and **Donghee Son^{*}**

Advanced Materials ("Rising Stars" series) **33**, 2104690 (2021)

Hot Topic: Gold (Hot Topics in chemistry and materials)

"Soft Implantable Bioelectronics"

Ja Hoon Koo⁺, Jun-Kyul Song⁺, Dae-Hyeong Kim^{*}, and **Donghee Son^{*}**

ACS Materials Letters **3**, 1528 (2021)

Front Cover Article

"Skin-like transparent polymer–hydrogel hybrid pressure sensor with pressure-sensitive microstructures"

Kyumin Kang, Hyunjin Jung, Soojung An, and Mikyung Shin^{*}, and **Donghee Son^{*}**

Polymers **13**, 3272 (2021)

"Phenol-hyaluronic Acid Conjugates: Correlation of Oxidative Crosslinking Pathway and Adhesiveness"

Jungwoo Kim, Sumin Kim, **Donghee Son^{*}**, and Mikyung Shin^{*}

Polymers **13**, 3130 (2021)

"Sundew-inspired adhesive hydrogel threads through reversible polyphenol-boronic acid complexation"

Jae Hyuk Choi, **Donghee Son^{*}**, and Mikyung Shin^{*}

Applied Sciences **11**, 8591 (2021)

"Soft Pressure Sensor Array based on Conducting Nanomembrane"

Daekwang Jung⁺, Kyumin Kang⁺, Hyunjin Jung⁺, Duhwan Seong, Soojung An, Jiyong Yoon, Wooseok Kim, Mikyung Shin, Hyoung Won Baac, Sangmin Won, Changhwan Shin^{*} and **Donghee Son^{*}**

Micromachines **12**, 933, (2021)

"Soft Bio-Integrated Multifunctional Devices Using an Intrinsically Stretchable Conducting Nanomembrane"

Sangkyu Lee⁺, Kyumin Kang⁺, Heewon Choi, Yewon Kim, Soojung An, Hyunjin Jung, Duhwan Seong, Kyuha Park, Hyoung Won Baac, **Donghee Son^{*}**

Applied Sciences **11**, 6562, (2021)

"Mechanically and electrically durable, stretchable electronic textile for robust wearable electronics"

Sun Hong Kim⁺, Yewon Kim⁺, Heewon Choi, Juhyung Park, Jeong Han Song, Hyoung Won Baac, Mikyung Shin, Jeonghun Kwak, and **Donghee Son^{*}**

RSC Advances **11**, 22327-22333 (2021)

"Self-Healing, Stretchable, Biocompatible, and Conductive Alginate Hydrogels through Dynamic Covalent Bonds for Implantable Electronics"

Yeonsun Choi⁺, Kyuha Park⁺, Heewon Choi⁺, **Donghee Son^{*}**, and Mikyung Shin^{*}

Polymers **13**, 1133 (2021)

"Durable and fatigue-resistant soft peripheral neuroprosthetics for *in vivo* bi-directional signaling"

Hyunseon Seo⁺, Sang Ihn Han⁺, Kang-Il Song⁺, Duhwan Seong, Kyungwoo Lee, Sun Hong Kim, Taesung Park, Ja Hoon Koo, Mikyung Shin, Hyoung Won Baac, Ok Kyu Park, Soong Ju Oh, Hyung-Seop Han, Hojeong Jeon, Yu-Chan Kim, Dae-Hyeong

Kim*, Taeghwan Hyeon* and Donghee Son*

Advanced Materials 2007346, <https://doi.org/10.1002/adma.202007346> (2021)

"Self-bondable and Stretchable Conductive Composite Fibers with Spatially Controlled Percolated Ag Nanoparticle Networks: Novel Integration Strategy for Wearable Electronics"

Chaebeen Kwon⁺, Duhwan Seong⁺, Jeong-Dae Ha, Dongwon Chun, Jee-Hwan Bae, Kukro Yoon, Minkyu Lee, Janghoon Woo, Chihyeong Won, Seungmin Lee, Yongfeng Mei, Kyung-In Jang, Donghee Son*, and Taeyoon Lee*

Advanced Functional Materials 30, 2070321, (2020)

Cover Article: <https://doi.org/10.1002/adfm.202070321>

"Adaptive self-healing electronic epineurium for chronic bidirectional neural interfaces"

Kang-Il Song⁺, Hyunseon Seo⁺, Duhwan Seong, Seunghoe Kim, Ki Jun Yu, Yu-Chan Kim, Jinseok Kim, Seok Joon Kwon, Inchan Youn*, Hyojin Lee*, and Donghee Son*

Nature Communications 11, Article number: 4195 (2020)

"Unconventional Device and Material Approaches for Monolithic Biointegration of Implantable Sensors and Wearable Electronics"

Ja Hoon Koo, Jun-Kyul Song, Seungwon Yoo, Sung-Hyuk Sunwoo, Donghee Son*, and Dae-Hyeong Kim*

Advanced Materials Technologies 2000407 doi.org/10.1002/admt.202000407 (2020)

"A skin-conformal, stretchable and breathable fiducial marker patch for surgical navigation systems"

Sangkyu Lee⁺, Duhwan Seong⁺, Jiyong Yoon, Sungjun Lee, Hyoung Won Baac, Deukhee Lee*, and Donghee Son*

Micromachines 11, 194 doi.org/10.3390/mi11020194 (2020)

"Wireless epidermal electromyogram sensing system"

Sungjun Lee⁺, Jiyong Yoon⁺, Daewoong Lee⁺, Duhwan Seong, Sangkyu Lee, Minsoo Jang, Junho Choi, Ki Jun Yu*, Jinseok Kim*, Sangyoun Lee*, and Donghee Son*

Electronics 9, 269 doi.org/10.3390/electronics9020269 (2020)

"Strain-sensitive stretchable self-healable semiconducting film for multiplexed skin-like sensor array"

Jin-young Oh⁺, Donghee Son⁺, Toru Katsumata⁺, Yeongjun Lee, Yeongin Kim, Jeffrey Lopez, Hung-Chin Wu, Jiheong Kang¹, Joonsuk Park, Xiaodan Gu, Jaewan Mun, Nathan Ging-Ji Wang, Yikai Yin, Youngjun Yun, Jeffrey B.-H. Tok and Zhenan Bao*

Science Advances 5, eaav3097 (2019)

"Nanomaterial-based Flexible and Stretchable Bioelectronics"

Jun-Kyul Song⁺, Kyungsik Do⁺, Ja Hoon Koo, Donghee Son*, and Dae-Hyeong Kim*

MRS Bulletin 44, 643-654 (2019)

"Nanomaterials in Skin-Inspired Electronics: Toward Soft and Robust Skin-Like Electronic Nano-Systems"

Donghee Son and Zhenan Bao*

ACS Nano 12, 11731-11739 (2018) **Cover Article, Featured in ACS Editors' Choice**

"An ultra-stretchable and self-healable nanocomposite conductor enabled by autonomously percolative electrical pathways"

Sunhong Kim⁺, Hyunseon Seo⁺, Jiheong Kang⁺, Jaeyoung Hong, Han-Jin Kim, Jaemin Kim, Jaewan Mun, Inchan Youn, Jinseok Kim, Hyun-Kwang Seok, Changhee Lee, Jeffrey B.-H. Tok, Zhenan Bao*, and Donghee Son*

ACS Nano 13, 6531-6539 (2019)

"Wire Electrodes Embedded in Artificial Conduit for Long-term Monitoring of the Peripheral Nerve Signal"

Woohyun Jung⁺, Sunyoung Jung⁺, Ockchul Kim, HyungDal Park, Wonsuk Choi, **Donghee Son**^{*}, Seok Chung^{*}, Jinseok Kim^{*}
Micromachines 10, 184 [doi:10.3390/mi10030184](https://doi.org/10.3390/mi10030184) (2019)

"Modular and reconfigurable stretchable electronic systems"

Jiheong Kang⁺, **Donghee Son**⁺, Orestis Vardoulis⁺, Jaewan Mun, Naoji Matsuhisa, Yeongin Kim, Jaemin Kim, Jeffrey B.-H. Tok, Zhenan Bao^{*}

Advanced Materials Technologies 1800417, <https://doi.org/10.1002/admt.201800417> (2018)

"An integrated self-healable electronic skin system fabricated via dynamic reconstruction of nanostructured conducting network"

Donghee Son⁺, Jiheong Kang⁺, Orestis Vardoulis⁺, Yeongin Kim, Naoji Matsuhisa, Jin Young Oh, John WF To, Jaewan Mun, Toru Katsumata, Yuxin Liu, Allister F. McGuire, Marta Krason, Francisco Molina Lopez, Jooyeun Ham, Ulrike Kraft, Yeongjun Lee, Youngjun Yun, Jeffrey B.-H. Tok, Zhenan Bao^{*}

Nature Nanotechnology 13, 1057 (2018)

(Nano Today, News, 'Skin-like nanowire-polymer composite heals itself' 22, 1-6 (2018))

"Tough and water-insensitive self-healing elastomer for robust electronic skin"

Jiheong Kang⁺, **Donghee Son**⁺, Ging-Ji Nathan Wang, Yuxin Liu, Jeffrey Lopez, Yeongin Kim, Jin-young Oh, Toru Katsumata, Jaewan Mun, Yeongjun Lee, Lihua Jin, Jeffrey B.-H. Tok, and Zhenan Bao^{*}

Advanced Materials 30, 1706846 (2018) (⁺Equal contribution)

"Wearable force touch sensor array using a flexible and transparent electrode"

Jun-Kyul Song⁺, **Donghee Son**⁺, Jaemin Kim⁺, Young Jin Yoo, Gil Ju Lee, Liu Wang, Moon Kee Choi, Jiwoong Yang, Mincheol Lee, Kyungsik Do, Ja Hoon Koo, Nanshu Lu, Ji Hoon Kim, Taeghwan Hyeon, Young Min Song^{*} and Dae-Hyeong Kim^{*}

Advanced Functional Materials 27, 1605286 (2017)

"Colloidal synthesis of uniform-sized molybdenum disulfide nanosheets for wafer-scale flexible nonvolatile memory"

Donghee Son⁺, Sue In Chae⁺, Myungbin Kim⁺, Moon Kee Choi, Jiwoong Yang, Kunsu Park, Vinayak S. Kale, Ja Hoon Koo, Changsoon Choi, Minbaek Lee, Ji Hoon Kim, Taeghwan Hyeon^{*} and Dae-Hyeong Kim^{*}

Advanced Materials 28, 9326 (2016)

"Wearable multiplexed array of silicon nonvolatile memory using nanocrystal charge confinement"

Jaemin Kim⁺, **Donghee Son**⁺, Mincheol Lee⁺, Changyeong Song, Jun-Kyul Song, Ja Hoon Koo, Dong Jun Lee, Hyung Joon Shim, Ji Hoon Kim, Minbaek Lee, Taeghwan Hyeon and Dae-Hyeong Kim^{*}

Science Advances 2, e1501101 (2016)

"Bioresorbable Electronic Stent Integrated with Therapeutic Nanoparticles for Endovascular Diseases"

Donghee Son⁺, Jongha Lee⁺, Dong Jun Lee⁺, Roozbeh Ghaffari, Sumin Yun, Seok Joo Kim, Ji Eun Lee, Hye Rim Cho, Soonho Yoon, Shixuan Yang, Seunghyun Lee, Shutao Qiao, Daishun Ling, Sanghun Shin, Jun-Kyul Song, Jaemin Kim, Taeho Kim, Hakyong Lee, Jonghoon Kim, Min Soh, Nohyun Lee, Cheol Seong Hwang, Sangwook Nam, Nanshu Lu, Taeghwan Hyeon^{*}, Seung Hong Choi^{*}, and Dae-Hyeong Kim^{*}

ACS Nano 9, 5937 (2015)

"Stretchable Carbon Nanotube Charge-Trap Floating-Gate Memory and Logic Devices for Wearable Electronics"

Donghee Son⁺, Ja Hoon Koo⁺, Jun-Kyul Song⁺, Jaemin Kim, Minchel Lee, Hyung Joon Shim, Minjoon Park, Minbaek Lee, Ji Hoon Kim, and Dae-Hyeong Kim^{*}

ACS Nano 9, 5585 (2015)

"Transparent and Stretchable Interactive Human Machine Interface Based on Patterned Graphene Heterostructures"

Sumin Lim⁺, **Donghee Son**⁺, Jaemin Kim⁺, Young Bum Lee, Jun-Kyul Song, Suji Choi, Dong Jun Lee, Ji Hoon Kim, Minbaek Lee, Taeghwan Hyeon and Dae-Hyeong Kim*

Advanced Functional Materials 25, 375 (2015)

"Multifunctional wearable devices for diagnosis and therapy of movement disorders"

Donghee Son⁺, Jongha Lee⁺, Shutao Qiao, Roozbeh Ghaffari, Jaemin Kim, Ji Eun Lee, Changyeong Song, Seok Joo Kim, Dong Jun Lee, Samuel Woojoo Jun, Shixuan Yang, Minjoon Park, Jiho Shin, Kyungsik Do, Mincheol Lee, Kwanghun Kang, Cheol Seong Hwang, Nanshu Lu, Taeghwan Hyeon and Dae-Hyeong Kim*

Nature Nanotechnology 9, 397 (2014)

(**Nature, Research Highlights**, Stick-on skin sensor measures motion, **508, 10 (2014)**)

(**Nature, News**, 'Electronic skin' equipped with memory **(2014)**)

(**Science, News**, Forget Smart Watches, 'Smart Skin' May Be the Next Big Thing in Wearable Computers **(2014)**)

"Nanoneedle Transistor-Based Sensors for the Selective Detection of Intracellular Calcium Ions"

Donghee Son⁺, Sung Young Park⁺, Byeongju Kim⁺, Jun Tae Koh, Tae Hyun Kim, Sangmin An, Doyoung Jang, Gyu Tae Kim, Wonho Jhe, and Seunghun Hong*

ACS Nano 5, 3888 (2011)

As co-AUTHOR, ARTICLES PUBLISHED IN JOURNALS

"Electrochemically Exfoliated Phosphorene Nanosheet Thin-Films for Wafer-Scale Near-Infrared Phototransistor Array"

Youngseo Jeon, Dongjoon Rhee, Bing Wu, Vlastimil Mazanek, In Soo Kim, **Donghee Son**, Zdeněk Sofer, and Joohoon Kang*
npj 2D Materials and Applications 6, Article number: 82 (2022)

"A hemispherical image sensor array fabricated with organic photo-memory transistors"

Yeongin Kim, Chenxin Zhu, Wen-Ya Lee, Anna Smith, Haowen Ma, Xiang Li, **Donghee Son**, Naoji Matsuhisa, Jaemin Kim, Won G. Bae, Sung Ho Cho, Myung-Gil Kim, Tadanori Kurosawa, Toru Katsumata, John W.F. To, Jin Young Oh, Seonghyun Paik, Soo Jin Kim, Lihua Jin, Feng Yan, Jeffrey B.-H. Tok, Zhenan Bao*

Advanced Materials 2203541 (2022)

"Micro-ultrasonic Assessment of Early Stage Clot Formation and Whole Blood Coagulation Using an All-Optical Ultrasound Transducer and Adaptive Signal Processing Algorithm"

Deblina Biswas, Jeongmin Heo, Pilgyu Sang, Prasanta Dey, Kayoung Han, Jong Hwan Ko, Sang Min Won, **Donghee Son**, Minah Suh, Hyung Sik Kim, Jong G Ok, Hui Joon Park*, Hyoung Won Baac*

ACS Sensor online publication (2022) (doi.org/10.1021/acssensors.2c00875)

"Addressing the Shortcomings of Polyphenol-Derived Adhesives: Achievement of Long Shelf Life for Effective Hemostasis"

Jaewon Ju, Subin Jin, Sumin Kim, Jae Hyuk Choi, Haesung A. Lee, **Donghee Son**, Haeshin Lee,* and Mikyung Shin*

ACS Applied Materials & Interfaces 14, 25115 (2022)

"Strain-Dependent Photoacoustic Characteristics of Free-Standing Carbon-Nanocomposite Transmitters"

Muhammad Faraz, Muhammad Awais Abbasi, **Donghee Son**, Changhwan Shin, Kyu-Tae Lee, Sang Min Won*, Hyoung Won Baac*

Sensors 22, 3432 (2022)

"Study on memory characteristics of fin-shaped feedback field effect transistor"

Shinick Han, Younghyun Kim, **Donghee Son**, Hyong Won Baac, Sang Min Won*, Changhwan Shin*

Semiconducting Science and Technology 37, 065006 (2022)

"Design of JL-CFET(junctionless complementary field effect transistor)-based inverter for low power applications"

Sumi Lee, Yejoo Choi, Sang Min Won, **Donghee Son**, Hyong Won Baac*, and Changhwan Shin*

Semiconducting Science and Technology 37, 035019 (2022)

"Optically anisotropic topical hemostatic coacervate for naked-eye identification of blood coagulation"

Subin Jin, Sumin Kim, Dae Seok Kim, **Donghee Son**, and Mikyung Shin*

Advanced Functional Materials 2110320 (2021)

"Variable-focus optoacoustic lens with wide dynamic range and long focal length by using a flexible polymer nano-composite membrane"

Muhammad Awais Abbasi, Muhammad Faraz, Min Gyu Joo, **Donghee Son**, Sang Min Won, Jong G. Ok, Hui Joon Park, Hyoung Won Baac*

Ultrasonics 117, 106545 (2021)

"Highly stretchable white-light electroluminescent devices with gel-type silica-coated all-inorganic perovskite"

Sang Yeop Lee, Sanghyun Jeon, Junhyuk Ahn, Junsung Bang, Ho Kun Woo, Kyu-joon Lee, Byung Ku Jung, Taesung Park, **Donghee Son**, Jae-Pyoung Ahn, Soong Ju Oh*

Applied Surface Science 563, 150229 (2021)

"An artificial neural tactile sensing system "

Sungwoo Chun*, Jong-Seok Kim+, Yongsang Yoo , Youngin Choi, Sung Jun Jung, Dongpyo Jang, Gwangyeob Lee, Kang-Il Song, Kum Seok Nam, Inchan Youn, **Donghee Son**, Changhyun Pang, Yong Jeong, Hachul Jung, Young-Jin Kim, Byong-Deok Choi, Wanjun Park, and Seongjun Park*

Nature Electronics 4, 429 (2021)

"Laser-generated focused ultrasound transducer using a perforated photoacoustic lens for tissue characterization"

Jeongmin Heo, Deblina Biswas, Kyu Kwan Park, **Donghee Son**, Hui Joon Park, Hyoung Won Baac*

Biomedical Optics Express 12, 1375 (2021)

"Stretchable and Robust Candle-Soot Nanoparticle-Polydimethylsiloxane Composite Films for Laser-Ultrasound Transmitters"

Muhammad Faraz, Muhammad Awais Abbasi, Pilgyu Sang, Sungjun Lee, **Donghee Son**, Hyoung Won Baac*

Micromachines 11, 631 doi.org/10.3390/mi11070631 (2020)

"Ink development and printing of conducting polymers for intrinsically stretchable interconnects and circuits"

Ulrike Kraft, Francisco Molina-Lopez, **Donghee Son**, Zhenan Bao*, Boris Murmann*

Advanced Electronic Materials 1900681 (2019)

"Surface-Controlled Molecular Self-Alignment in Polymer Actuators for Flexible Microrobot Applications "

Minsu Jang+, Jun Sik Kim+, Ji-Hun Kim, Do Hyun Bae, Min Jun Kim, **Donghee Son**, Yong-Tae Kim, Soong Ho Um*, Yong Ho Kim*, Jinseok Kim*

Polymers 11, 736 [doi:10.3390/polym11040736](https://doi.org/10.3390/polym11040736) (2019)

"Stretchable organic optoelectronic sensorimotor synapse"

Yeongjun Lee⁺, Jin Young Oh⁺, Wentao Xu, Onnuri Kim, Taeho Roy Kim, Jiheong Kang, Yeongin Kim, **Donghee Son**, Jeffery B.-H. Tok, Moon Jeong Park, Zhenan Bao^{*}, Tae-Woo Lee^{*}
Science Advances 4, eaat7387 DOI: 10.1126/sciadv.aat7387 (2018)

"A bioinspired flexible organic artificial afferent nerve"

Yeongin Kim⁺, Alex Chortos⁺, Wentao Xu⁺, Yuxin Liu, Jin Young Oh, **Donghee Son**, Jiheong Kang, Amir M. Foudeh, Chenxin Zhu, Yeongjun Lee, Simiao Niu, Jia Liu, Raphael Pfattner, Zhenan Bao^{*}, Tae-Woo Lee^{*}
Science 360, 998 (2018)

"Deformable Organic Nanowire Field-Effect Transistors"

Yeongjun Lee, Jin Young Oh, Taeho Roy Kim, Xiaodan Gu, Yeongin Kim, Ging-Ji Nathan Wang, Hung-Chin Wu, Raphael Pfattner, John W.F. To, Toru Katsumata, **Donghee Son**, Jiheong Kang, James R. Matthews, Weijun Niu, Mingqian He, Robert Sinclair, Yi Cui, Jeffrey B.-H. Tok, Tae-Woo Lee^{*}, Zhenan Bao^{*}
Advanced Materials 1704401 (2018)

"Human-eye-inspired soft optoelectronic device using high-density MoS₂-graphene curved image sensor array"

Changsoon Choi⁺, Moon Kee Choi⁺, Siyi Liu⁺, Min Sung Kim, Ok Kyu Park, Changkyun Im, Jaemin Kim, Xiaoliang Qin, Gil Ju Lee, Kyoung Won Cho, Myungbin Kim, Eehyung Joh, Jongha Lee, **Donghee Son**, Seung-Hae Kwon, Noo Li Jeon, Young Min Song^{*}, Nanshu Lu^{*}, and Dae-Hyeong Kim^{*}
Nature Communications 8, 1664 (2017)

"Wearable Electrocardiogram Monitor Using Carbon Nanotube Electronics and Color-Tunable Organic Light-Emitting Diodes"

Ja Hoon Koo⁺, Seongjin Jeong⁺, Hyung Joon Shim, **Donghee Son**, Jaemin Kim, Dong Chan Kim, Suji Choi, Jong-In Hong, and Dae-Hyeong Kim^{*}
ACS Nano 11, 10032 (2017)

"Ultra-Wideband Multi-Dye-Sensitized Upconverting Nanoparticles for Information Security Application"

Jongha Lee, Byeongjun Yoo, Hakyong Lee, Gi Doo Cha, Hee-Su Lee, Youngho cho, Sang Yeon Kim, Hyunseon Seo, Woongchan Lee, **Donghee Son**, Myungjoo Kang, Hyung Min Kim, Yong Il Park, Taeghwan Hyeon^{*} and Dae-Hyeong Kim^{*}
Advanced Materials 29, 1603169 (2017)

"Oxide Nanomembrane Hybrids with Enhanced Mechano- and Thermo- Sensitivity for Semitransparent Epidermal Electronics"

Minjoon Park⁺, Kyungsik Do⁺, Jaemin Kim⁺, **Donghee Son**, Ja Hoon Koo, Jinkyung Park, Jun-Kyul Song, Ji Hoon Kim, Minbaek Lee, Taeghwan Hyeon and Dae-Hyeong Kim^{*}
Advanced Healthcare Materials 4, 992 (2015)

"Stretchable silicon nanoribbon electronics for skin prosthesis"

Jaemin Kim⁺, Mincheol Lee⁺, Hyung Joon Shim⁺, Roozbeh Ghaffari, Hye Rim Cho1, **Donghee Son**, Yei Hwan Jung, Min Soh, Changsoon Choi, Sungmook Jung, Kon Chu, Daejong Jeon, Soon-Tae Lee, Ji Hoon Kim, Seung Hong Choi, Taeghwan Hyeon and Dae-Hyeong Kim^{*}
Nature Communiucations 5:5747 (2014).

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