

Profile

Jeong Hoon Lee is a professor at Electrical Engineering, Kwangwoon University, South Korea. He received a B.S. degree in Advanced Material Engineering (Ceramic Engineering) at Yonsei University, Seoul, South Korea, in 1997. He received a Ph.D. from the same department in 2004. He specialized in MEMS/Nanomechanics from 1999 to 2005 at the Korea Institute of Science and Technology (KIST) in Seoul, South Korea. Before joining Kwangwoon University in Sep 2008, he was a Postdoctoral Associate at RLE and EECS, Massachusetts Institute of Technology (MIT), USA (2005 to 2008). His current main research is the micro/nano-based devices (i.e., sensing/screening and sample preparation) for precision medicine as well as POCT (h-index: 30-as of Nov 2021)

Research ID

ORCID: <https://orcid.org/0000-0001-7344-6060>
google scholar: <https://scholar.google.com/citations?user=AeP0iR8AAAAJ&hl=en>

Research interests

Smart healthcare devices (biosensor & bioelectronics): micro/nanodevice for POCT
Precision medicine (Sample preparation): POCT & molecular diagnostics
Biomimetics: sensing + drug screening

Experience

Professor
in Electrical Engineering, Kwangwoon university, South Korea 2018-
Co-founder
Calth Co, South Korea 2018- (be listed on KONEX 2021.11~ now preparing KOSDAQ)
Associate Professor
in Electrical Engineering, Kwangwoon university, South Korea 2013-2018
Assistance Professor
in Electrical Engineering, Kwangwoon university, South Korea 2008-2013
Postdoctoral Associate
in EECS, Massachusetts Institute of Technology (MIT), USA 2005-2008
Postdoctoral Associate
in Microsystem Research Center, Korea Institute of Science and Technology (KIST), South Korea 2004-2005

Education

Ph.D. in Advanced Material Engineering (Ceramic Engineering),
Yonsei University, South Korea, 1999-2014
M.S. in Advanced Material Engineering (Ceramic Engineering),
Yonsei University, South Korea, 1997-1999
B.S. in Advanced Material Engineering (Ceramic Engineering),
Yonsei University, South Korea, 1993-1997

Awards & Members

2020 **Editor**, Book by Springer-Natures. "Paper-Based Medical Diagnostic Devices"
2020 **Review Editor** on the Editorial Board of Nanobiotechnology
Frontiers Bioengineering and Biotechnology: Lausanne, CH
2019 **Excellent Academic Award** (Hwado award) by Kwangwoon University
2019 **Special Issue editor**, "Recent Advances in High Sensitive Point-of-Care (POC) Diagnostics" in Sensors (MDPI)
2019~ Micromachines (ISSN 2072-666X) **editorial board**
2019 Special Issue in Sensors (MDPI) **guest editor**
2015~ **Marquis Who's Who LLC: Berkeley Heights, NJ, US** (33rd Edition)

by Marquis Who's Who® 2016-01-01 to present Membership

2016~ KMEMS, **board member**

2016~ BioChips, **board member**

2015~ **IEEE members**

2011 ACS contributing awards

**SCI Journals &
Patents & Industry**

97 SCI papers (as of Nov 2021)

45 patents holders (as of Jan 2021) including Korean, US, EU and PCT

Co-founder CALTH (high sensitive diagnostic for COVID-19, influenza, HCV, and HIV) (2018~)

Technical advisor Absology (2017~)

**Research
summary
(as of Feb 2021)**

h-index: 30

1 **Nature Communications**

1 **Science Advances**

2 papers **impact factor >20**

13 **within JCR 3%** (H1 grade)

15 papers **impact factor >10**

46 papers **impact factor >5**

97 **SCI papers**

>45 **patent holder**

Co-founder Calth Co. (from 2018)

Teaching & classes

Graduate Biosensors, Micro/nano device and systems, Interactive sensor technology, Topics of advanced materials, Nanobio device, IT fusion technology for start-up, Electronic sensor system. etc.

Undergraduate Electronic physics, Semiconductor fabrication, Electromagnetic, Material Engineering and Microelectronic Processing. Advanced mathematics. Capstone design, Circuit Analysis and Logic Circuit lab, AC and Electronic Circuits Lab. E etc.

Main Achievements

1. Dongtak Lee, Dongsung Park, Insu Kim, Sang Won Lee, Wonseok Lee, Kyo Seon Hwang, Jeong Hoon Lee*, Gyudo Lee*, and Dae Sung Yoon*. "Plasmonic nanoparticle amyloid corona for screening A β oligomeric aggregate-degrading drugs", **Nature Communications (2021)** 12, Article number: 639 (impact factor: 12.12). * Co-corresponding author
2. Dohwan Lee, Jee Won Lee, Cheonjung Kim, Dongho Lee, Seok Chung, Dae SungYoon, Jeong Hoon Lee, "Highly efficient and scalable biomarker preconcentrator based on nanoelectrokinetics", **Biosensors and Bioelectronics (2020)** 176, 15, 112904 (impact factor: 10.257). corresponding author
3. Insu Kim, Dongtak Lee, Sang Won Lee, Jeong Hoon Lee*, Gyudo Lee*, Dae Sung Yoon* "Coagulation-inspired direct fibrinogen assay using plasmonic nanoparticles functionalized with red blood cell Membranes" **ACS Nano. (2021)** (IF=14.58) * Co-corresponding author
4. Hyerin Kim, Kyu Hyoung Lee, Sung Il Han, Dongho Lee, Seok Chung, Dohwan Lee and Jeong Hoon Lee, "Origami-paper-based device for microvesicle/exosome preconcentration and isolation" **Lab Chip, 2019**, 19,3917-3921 (IF=6.7) corresponding author
5. Jeong Hoon Lee, Pan Kee Bae, Hyunho Kim, Yoon Ji Song, So Yeon Yi, Jungsun Kwon, Joon-Seok Seo, Jeong-min Lee, Han-Sang Jo, Seon Mee Park, Hee Sue Park, Kyeong Seob Shin*, Seok Chung*, Yong Beom Shinb*. "A Rapid Quantitative On-site Coronavirus Disease 19 Serological Test", **Biosensors and Bioelectronics** 2021, 191, 1, 113406 (impact factor: 10.257).* first author

+IP transfer and Co-founder : Calth Cooperation (2018~) . 1st IP transfer: sample preconcentrator (KR 10-1770557) (2018-03) Transferred to Calth Co., South Korea & 2nd IP transfer: lateral flow assay kit (KR 10-1652294 & PCT) (2018-3) Transferred to Calth Co., South Korea (기술이전: 2개의 업체에 총 4건의 기술이전 시행: 공동창업 1건)

Books

1. **Editor**, Book by Springer-Natures. "Paper-Based Medical Diagnostic Devices" and **chapter authors** (chapter 1 & chapter 7) Dohwan Lee, Jeong Hoon Lee "Chapter 1. Paper-Based Diagnostic Device History and Challenges ", Paper-Based Medical Diagnostic Devices : Part of the Bioanalysis book series (BIOANALYSIS, volume 10), Print ISBN 978-981-15-8722-1, 2020 Springer Nature Switzerland AG & Dohwan Lee, Jeong Hoon Lee "Chapter 7. Paper-Based Biosensors with Lateral/Vertical Flow Assay ", Paper-Based Medical Diagnostic Devices : Part of the Bioanalysis book series (BIOANALYSIS, volume 10), Print ISBN 978-981-15-8722-1, (2020) Springer Nature Switzerland AG
2. **Chapter authors**: T. S. Kim, D. S. Yoon, and J. H. Lee "Chapter 13. Nanomechanical Cantilever Devices for Biological Sensors", *Micromanufacturing and Nanotechnology*, Springer, Edited by N. P. Manhalik (2006)

SCI papers

97. Junghyo Yoon, Youngkyu Cho, Jaehoon Kim, Hyunho Kim, Kyuhwan Na, Jeong Hoon Lee *, Seok Chung *, "Simulation and experimental study of Ion Concentration Polarization induced Electroconvective Vortex and Particle Movement" **Micromachines** 2021 accepted (impact factor: 2.74). *Co-corresponding author

96. Jeong Hoon Lee, Pan Kee Bae, Hyunho Kim, Yoon Ji Song, So Yeon Yi, Jungsun Kwon, Joon-Seok Seo, Jeong-min Lee, Han-Sang Jo, Seon Mee Park, Hee Sue Park, Kyeong Seob Shin*, Seok Chung*, Yong Beom Shinb*. "A Rapid Quantitative On-site Coronavirus Disease 19 Serological Test", **Biosensors and Bioelectronics** 2021, 191, 1, 113406 (impact factor: 10.257). * first author

95. Hyo Gi Jung, Dongtak Lee, Sang Won Lee, Insu Kim, Yonghwan Kim, Jae Won Jang, Jeong Hoon Lee, Gyudo Lee*, and Dae Sung Yoon*. "Nanoindentation for Monitoring the Time-first Variant Mechanical Strength of Drug-Loaded Collagen Hydrogel Regulated by Hydroxyapatite Nanoparticles", **ACS Omega** 2021 (impact factor: 2.87).

94. Junghwan Lee, Heesang Eom, Yuli Sun Hariyani, Cheonjung Kim, Yongkyoung Yoo, Jeonghoon Lee*, Cheolsoo Park*, "End-to-end Convolutional Neural Network Design for Automatic Detection of Influenza Virus" **IEIE Transactions on Smart Processing & Computing** 10(1), 2021.2, 31-36 *Co-corresponding author

93. Jaehoon Kim, Junghyo Yoon, Jae-Yeong Byun, Hyunho Kim, Sewoon Han, Junghyun Kim, Jeong Hoon Lee, Han-Sang Jo, Seok Chung * "Nano-interstice driven powerless blood plasma extraction in a membrane filter integrated microfluidic device" **Sensors**, 2021 Feb 15;21(4):1366. (impact factor: 3.275),

92. Junwoo Lee, Yong Kyoung Yoo, Dohwan Lee, Cheonjung Kim, Kang Hyeon Kim, Seungmin Lee, Seungmin Kwak, Ji Yoon Kang, Hyungseok Kim, Dae Sung Yoon, Don Hur and Jeong Hoon Lee "Origami Paper-based Sample Preconcentration using Sequentially Driven Ion Concentration Polarization", **Lab on a Chip**, 2021, DOI: 10.1039/D0LC01032D (impact factor: 6.914). : selected as Lab on a Chip HOT Articles 2021 Corresponding author

91. Dongtak Lee, Dongsung Park, Insu Kim, Sang Won Lee, Wonseok Lee, Kyo Seon Hwang, Jeong Hoon Lee*, Gyudo Lee*, and Dae Sung Yoon*. "Plasmonic nanoparticle amyloid corona for screening A β oligomeric aggregate-degrading drugs", **Nature Communications** 12, Article number: 639 (2021) (impact factor: 12.12). * Co-corresponding author

90. Insu Kim, Dongtak Lee, Sang Won Lee, Jeong Hoon Lee*, Gyudo Lee*, Dae Sung Yoon*, "Coagulation-inspired direct fibrinogen assay using plasmonic nanoparticles functionalized with red blood cell Membranes", **ACS NANO**, Just accepted (2021) (impact factor: 14.58). * Co-corresponding author

89. Sang Won Lee, Wonseok Lee, Insu Kim, Dongtak Lee, Dongsung Park, Woong Kim, Jinsung Park, Jeong Hoon Lee*, Gyudo Lee*, Dae Sung Yoon* "Bio-inspired Electronic Textile Yarn-based NO₂ Sensor using Amyloid-Graphene Composite", ", **ACS Sensors**, 2021, 6, 3, 777–785 :selected as Front Cover article (impact factor: 6.944). * Co-corresponding author

88. Dohwan Lee, Jee Won Lee, Cheonjung Kim, Dongho Lee, Seok Chung, Dae Sung Yoon, Jeong Hoon Lee, "Highly efficient and scalable biomarker preconcentrator based on nanoelectrokinetics", **Biosensors and Bioelectronics** 176, 15, 112904 (2020) (impact factor: 10.257). * Corresponding author

87. S. W. Lee, H. G. Jung, I. Kim, D. Lee, W. Kim, S. H. Kim, J. Lee, J. Park, J. H. Lee, G. Lee, D. S. Yoon, "Highly Conductive and Flexible Dopamine-Graphene Hybrid Electronic Textile Yarn for Sensitive and Selective NO₂ Detection", **ACS Appl. Mater. Interfaces** 2020, 12, 41, 46629–46638 (Selected as Cover Article) (impact factor: 8.758).

86. Jaehoon Kim, Kihun Hong, Hyunho Kim, Joonseok Seo, Jaeun Jeong, Pan Kee Bae, Yong Beom Shin, Jeong Hoon Lee*, Hyun Jeong Oh*, Seok Chung*, "Microfluidic immunoassay for point-of-care testing using simple fluid vent control" **Sensors & Actuators: B. Chemical** (2020) *Sensors and Actuators B: Chemical*, (2020) Volume 316, 1 August, 2020 128094 (impact factor: 6.393). * co-corresponding author

85. Dohwan Lee, Kyung Wook Wee, Hyerin Kim, Sung Il Han, Seungmin Kwak, Dae Sung Yoon*, Jeong Hoon Lee*, "Paper-Based Preconcentration and Isolation of Microvesicles and Exosomes (2020) **J. Vis. Exp.** (158), e61292, doi:10.3791/61292 (2020). * Corresponding author

84. Yong Kyoung Yoo, Gangeun Kim, Dongsung Park, Jinsik Kim, YoungSoo Kim, Hye Yun Kim, Seung Hoon Yang, Jeong Hoon Lee, and Kyo Seon Hwang, "Gold nanoparticles assisted sensitivity improvement of interdigitated microelectrodes biosensor for amyloid- β detection in plasma sample" **Sensors and Actuators B: Chemical**, 2020 Volume 308, 1 April 2020, 127710 (impact factor: 6.393)

83. Hyerin Kim, \ddagger Kyu Hyoung Lee, \ddagger , Sung Il Han, Dongho Lee, Seok Chung, *d Dohwan Lee* and Jeong Hoon Lee*, " Origami-paper-based device for microvesicle/exosome preconcentration and isolation" **Lab Chip**, 2019,19, 3917-3921 (IF~ 6.914) * Corresponding author

82. Junwoo Lee*, Hyerin Kim*, Youhee Heo, Yong Kyoung Yoo, Sung Il Han, Cheonjung Kim, Don Hur, Hyungsuk Kim, Ji Yoon Kang** and Jeong Hoon Lee***, "Enhanced Paper-based ELISA for Simultaneous EVs/exosome Isolation and Detection using a Streptavidin Agarose-based Immobilization" **Analyst**, 2020, **145**, 157-164 (IF~ 3.864) * Corresponding author

81. Sung Il Han, Dohwan Lee, Hyerin Kim, Yong Kyoung Yoo, Cheonjung Kim, Junwoo Lee, Kang Hyeon Kim, Hyungsuk Kim, Dongho Lee, Kyo Seon Hwang, Dae Sung Yoon*, Jeong Hoon Lee*, "Electrokinetic Size-Based Spatial Separation of Micro/Nanospheres Using Paper-Based 3D Origami Preconcentrator" **Anal. Chem.** 2019, 91, 16, 10744–10749 (IF~ 6.35) * Corresponding author

80. Kyungjae Lee*, Yong Kyoung Yoo*, Myung-Sic Chae, Kyo Seon Hwang, Junwoo Lee, Hyungsuk Kim, Don Hur* & Jeong Hoon Lee* "Highly selective reduced graphene oxide (rGO) sensor based on a peptide aptamer receptor for detecting explosives" **Scientific Reports** volume 9, Article number: 10297 (2019) (IF~ 4.525) * Corresponding author

79. Jae Kwon, Yong Kyoung Yoo, Jeong Hoon Lee, and Jae-Hyuk Ahn, "pH Sensing Characteristics of Extended-Gate Field-Effect Transistor with Al₂O₃ Layer" **J. Nanosci. Nanotechnol.** 2019, Vol. 19, No. 10 pp 6682–6686 (IF~ 1.354)

78. YoungSoo Kim, Yong Kyoung Yoo, Hye Yun Kim, Jee Hoon Roh, Jinsik Kim, Seungyeop Baek, Jinny Claire Lee, Hye Jin Kim, Myung-Sic Chae, Dahye Jeong, Dongsung Park, Sejin Lee, HoChung Jang, Kyeonghwan Kim, Jeong Hoon Lee, Byung Hyun Byun, Su Yeon Park, Jeong Ho Ha, Kyo Chul Lee, Won Woo Cho, Jae-Seung Kim, Jae-Young Koh, Sang Moo Lim, Kyo Seon Hwang, "Comparative analyses of plasma amyloid-b levels in heterogeneous and monomerized states by interdigitated microelectrode sensor system" **Sci. Adv.** 2019;5:eaav1388 (17 April 2019) (IF~ 11.51)

77. Lee, Dongtak; Lee, Hyungbeen; Lee, Gyudo; Kim, Insu; Lee, Sang Won; Kim, Woong; Lee, Sang Woo; Lee, Jeong Hoon; Park, Jinsung; Yoon, Dae Sung, "Extremely sensitive and wide-range silver ion detection via assessing the integrated surface potential of a DNA-capped gold nanoparticle" **Nanotechnology** 30 (2019) 085501 (10pp) (IF~ 3.4)

76. Yong Kyoung Yoo*, Junwoo Lee*, Hyungsuk Kim, Kyo Seon Hwang, Dae Sung Yoon,** and Jeong Hoon Lee** "Toward Exosome-Based Neuronal Diagnostic Devices" **Micromachines** **2018**, 9(12), 634 (IF~ 2.22) * Corresponding author
75. Sung Il Han, Yong Kyoung Yoo, Junwoo Lee, Cheonjung Kim, Kyungjae Lee, Tae Hoon Lee, Hyungsuk Kim, Dae Sung Yoon, Kyo Seon Hwang, Rhokyun Kwak and Jeong Hoon Lee, "High-ionic-strength pre-concentration via ion concentration polarization for blood-based biofluids," **SENSOR ACTUAT B CHEM**, 268, 485–493 (2018) (IF~ 5.401) * Corresponding author
74. Dahye Jeong, Jinsik Kim, Myung-Sic Chae, Wonseok Lee, Seung-Hoon Yang, YoungSoo Kim, Seung Min Kim, Jin San Lee, Jeong Hoon Lee, Jungkyu Choi, Dae Sung Yoon *, Kyo Seon Hwang, "Multifunctionalized reduced graphene oxide biosensors for simultaneous monitoring of structural changes in amyloid- β 40" **Sensors** 28;18(6):1738 2018
73. Sang Won Lee, Wonseok Lee, Dongtak Lee, Yeseong Choi, Woong Kim, Jinsung Park, Jeong Hoon Lee, Gyudo Lee, Dae Sung Yoon "A simple and disposable carbon adhesive tape-based NO₂ gas sensor," **SENSOR ACTUAT B CHEM**, 266, 485–492(2018) (IF~5.401)
72. Jeong Hoon Lee*, Seungmin Kwak*, Jin-Hyung Lee, Inho Kim, Yong Kyoung Yoo, Tae Hoon Lee, Young-Seok Shim, Jinseok Kim, and Kyu Hyoung Lee, "Sputtered PdO decorated TiO₂ Sensing Layer for a Hydrogen Gas Sensor" **journal of nanomaterials**, Article ID 8678519, 8 pages (2018) (IF~ 1.871)
71. Seungmin Kwak*, Young-Seok Shim*, Yongkyoung Yoo, Jin-Hyung Lee, Inho Kim, Jinseok Kim, Kyu Hyoung Lee* and Jeong Hoon Lee*, "MEMS-based Gas Sensor using PdO-decorated TiO₂ thin film for Highly Sensitive and Selective H₂ Detection with Low Power Consumption," **electronic materials letters**, May 2018, 14(3), pp 305–313 (2018) (IF~1.77) * Corresponding author
70. Yong Kyoung Yoo, Dae Sung Yoon, Gangeun Kim, Jinsik Kim, Sung Il Han, Junwoo Lee, Myung-Sic Chae, Sang-Myung Lee, Kyu Hyoung Lee, Kyo Seon Hwang & Jeong Hoon Lee, "An Enhanced Platform to Analyse Low-Affinity Amyloid β Protein by Integration of Electrical Detection and Preconcentrator," **Scientific Reports** vol 7, 14303 (2017) (IF~4.847) * Corresponding author
69. Insu Kim, Dohyung Kwon, Dongtak Lee, Tae Hoon Lee, Jeong Hoon Lee, Gyudo Lee, Dae Sung Yoon "A highly permselective electrochemical glucose sensor using red blood cell membrane," **Biosensors and Bioelectronics** 102(15) (2018), 617–623 (IF~10.25)
68. Yong Kyoung Yoo, Jinsik Kim, Gangeun Kim, Young Soo Kim, Hye Yun Kim, Sejin Lee, Won Woo Cho, Seongsoo Kim, Sang-Myung Lee, Byung Chul Lee, Jeong Hoon Lee and Kyo Seon Hwang, "A highly sensitive plasma-based amyloid- β detection system through medium-changing and noise cancellation system for early diagnosis of the Alzheimer's disease," **Scientific Reports** 7,8882 (2017)(IF~4.25)
67. Myung-Sic Chae, Jinsik Kim, Dahye Jeong, YoungSoo Kim, Jee Hoon Roh, Sung Min Lee, Youhee Heo, Ji Yoon Kang, Jeong Hoon Lee, Dae Sung Yoon, Tae Geun Kim, Suk Tai Chang, Kyo Seon Hwang "Enhancing surface functionality of reduced graphene oxide biosensors by oxygen plasma treatment for Alzheimer's disease diagnosis," **Biosensors and Bioelectronics** 92 (2017) 610–617. (IF~10.25)
66. Myung-Sic Chae, Jinsik Kim, Yong Kyoung Yoo, Jeong Hoon Lee, Tae Geun Kim and Kyo Seon Hwang "Study of Alzheimer's Disease-Related Biophysical Kinetics with a Microslit-Embedded Cantilever Sensor in a Liquid Environment," **Sensors (Basel)**. 2017 Aug 7;17(8) (IF~2.67)

64. Choong Eun Jin, Seung-Seop Yeom, Bonhan Koo, Tae Yoon Lee, Jeong Hoon Lee, Yong Shin and Seok-Byung Lim, "Rapid and accurate detection of KRAS mutations in colorectal cancers using the isothermal-based optical sensor for companion diagnostics" **Oncotarget**, 2017 Oct 13; 8(48): 83860–83871
63. (article) Dohwan Lee, Dr Yong Kyoung Yoo and Prof. Jeong Hoon Lee. "Simple, fast and highly sensitive colorimetric detection of Zika virus," **Clinical Laboratory International**, Jun p20, 2017: <http://www.clinlabint.com/detail/clinical-laboratory/simple-fast-and-highly-sensitive-colorimetric-detection-of-zika-virus/> * Corresponding author
62. Cheonjung Kim*, Yong Kyoung Yoo*, Sung Il Han, Junwoo Lee, Dohwan Lee, Kyungjae Lee, Kyo Seon Hwang, Kyu Hyoung Lee, Seok Chung** and Jeong Hoon Lee**, "Battery operated preconcentration-assisted lateral flow assay" **Lab Chip**, 2017, 17, 245 (IF~6.00) * Corresponding author
61. Jeong Hoon Lee, Kyu Hyoung Lee, Sung Wng Kim, Sang Il Kim, Soon-Mok Choi, Jong-Young Kim, Se Yun Kim, Jong Wook Roh, Hee Jung Park "Doping and band engineering by vanadium to enhance the thermoelectric performance in n-type Cu_{0.008}Bi₂Te_{2.7}Se_{0.3}", **Physica B: Condensed Matter**, 517(15) 1–5p, 2017. (IF~1.38).
60. Kyungjae Lee, Yong Kyoung Yoo, Sung Il Han, Junwoo Lee, Dohwan Lee, Cheonjung Kim and Jeong Hoon Lee "Folding-paper-based preconcentrator for low dispersion of preconcentration plug," **Micro and Nano Syst Lett** (2017) 5:11 * Corresponding author
59. Dohwan Lee, Yong Shin, Seok Chung, Kyo Seon Hwang, Dae Sung Yoon, and Jeong Hoon Lee, "Simple and Highly Sensitive Molecular Diagnosis of Zika Virus by Lateral Flow Assays," **Anal. Chem.**, 2016, 88, 24, 12272–12278 (IF~6.32). * Corresponding author
58. Bonhan Koo, Choong Eun Jin, Tae Yoon Lee, Jeong Hoon Lee, Mi Kyoung Park, Heungsung Sung, Se Yoon Park, Hyun Jung Lee, Sun Mi Kim, Ji Yeun Kim, Sung-Han Kim, Yong Shin, "An isothermal, label-free, and rapid one-step RNA amplification/detection assay for diagnosis of respiratory viral infections" **Biosensors and Bioelectronics**, Volume 90, 15 2017, Pages 187–194 (IF~10.25)
57. Y.Cho, J.Yoon, D.W.Lim, J.Kim, J.H.Lee, S.Chung, "Ion concentration polarization for pre-concentration of biological samples without pH change" **Analyst**, 2016, **141**, 6510-6514 (IF~4.10)
56. Yong Kyoung Yoo, Jaekwang Lee, Jinsik Kim, Gangeun Kim, Sunpil Kim, Jeongyeon Kim, Heejung Chun, Jeong Hoon Lee, C. Justin Lee & Kyo Seon Hwang, "Ultra-sensitive detection of brain-derived neurotrophic factor (BDNF) in the brain of freely moving mice using an interdigitated microelectrode (IME) biosensor" **Scientific Reports** 6, Article number: 33694 (2016) (IF~4.25)
55. Jinsik Kim, Myung-Sic Chae, Sung Min Lee, Dahye Jeong, Byung Chul Lee, Jeong Hoon Lee, YoungSoo Kim, SukTaiChang & Kyo Seon Hwang, "Wafer-scale high-resolution patterning of reduced graphene oxide films for detection of low concentration biomarkers in plasma" **Scientific Reports** 6, 31276 (2016) (IF~4.25)
54. Hye Jin Kim, Jinsik Kim, Yong Kyoung Yoo, Jeong Hoon Lee, Jung Ho Park, Kyo Seon Hwang, "Sensitivity improvement of an electrical sensor achieved by control of biomolecules based on the negative dielectrophoretic force" **Biosensors and Bioelectronics** 85 (2016) 977–985 (IF~10.25)

53. Sung Il Han, Kyo Seon Hwang, Rhokyun Kwak and Jeong Hoon Lee, "Microfluidic paper-based biomolecule preconcentrator based on ion concentration polarization" **Lab Chip**, 2016, **16**, 2219-2227 (selected as back cover article) (IF~6.32) *
Corresponding author

52. Hyungbeen Lee, Sang Won Lee, Gyudo Lee, Wonseok Lee, Jeong Hoon Lee, Kyo Seon Hwang, Jaemoon Yang, Sang Woo Lee and Dae Sung Yoon, "Kelvin probe force microscopy of DNA-capped nanoparticles for single-nucleotide polymorphism detection" **Nanoscale**, 2016, **8**, 13537-13544 (IF~7.7)

51. Kyu Hyoung Lee, Byungki Ryu, Hee Jung Park, Kimoon Lee, Jong Wook Roh, Sang Il Kim, Sungwoo Hwang, Soon-Mok Choi, Jong-Young Kim, Jeong Hoon Lee, Jae-Hong Lim, Sung Wng Kim, "Enhancement of the Thermoelectric Figure of Merit in n-type $\text{Cu}_0.008\text{Bi}_2\text{Te}_{2.7}\text{Se}_{0.3}$ by Using Nb Doping" **Journal of the Korean Physical Society**, Vol. 68, No. 1, 2016, pp. 7~11 (IF~0.41)

50. Hyungbeen Lee, Wonseok Lee, Jeong Hoon Lee*, and Dae Sung Yoon* "Surface potential analysis of nanoscale biomaterials and devices using Kelvin probe force microscopy" **J Nanomater.** (2015) Article ID 4209130; (*: equally contributed corresponding authors) (IF~1.87) * Corresponding author

49. Junghyo Yoon, Youngkyu Cho, Jeong Hoon Lee, and Seok Chung "Tunable sheathless microfluidic focusing using ion concentration polarization" **Appl. Phys. Lett.**, 107, 083507 (2015) (IF~3.41)

48. Myung-Sic Chaet, Jinsik Kim †, Yong Kyoung Yoo, Ji Yoon Kang, Jeong Hoon Lee,* and Kyo Seon Hwang* "Micro-Preconcentrator Combined Olfactory Sensing System with a Micromechanical Cantilever Sensor for Detecting 2,4-Dinitrotoluene Gas Vapor," **Sensors** 2015, 15, 18167-18177; (*: equally contributed corresponding authors) (IF~2.67)

47. Jin-Hyung Lee, Jeong Hoon Lee, Sang Kyung Kim, Hyung-Ho Park, and Tae Song Kim, "Hybrid fabrication of piezoelectric thick films using a sol-infiltration and photosensitive direct-patterning technique," **J Mater Sci** (2015) 50:3845–3853. (IF~2.59)

46. Hyeona Mun, Kyu Hyoung Lee, Suk Jun Kim, Jong-Young Kim, Jeong Hoon Lee, Jae-Hong Lim, Hee Jung Park, Jong Wook Roh *, Sung Wng Kim *, "Fe-Doping Effect on Thermoelectric Properties of p-type $\text{Bi}_{0.48}\text{Sb}_{1.52}\text{Te}_3$," **Materials** 2015, 8, 959-965.

45. Kyu Hyoung Lee, Soon-Mok Choi, Sang Il Kim, Jong Wook Roh, Dae Jin Yang, Weon Ho Shin, Hee Jung Park, Ki Moon Lee, Sungwoo Hwang, Jeong Hoon Lee, Hyeona Mun, and Sung Wng Kim, "Doping effects on the thermoelectric properties of Cu-intercalated $\text{Bi}_2\text{Te}_{2.7}\text{Se}_{0.3}$," **Current Applied Physics**, 15(3) pp 190~193 (2015)

44. Junwoo Lee, Wook Choi, Yong Kyoung Yoo, Kyo Seon Hwang, Sang-Myung Lee, Sungchul Kang, Jinseok Kim*, Jeong Hoon Lee*, "Micro-fabricated Triaxial Force Sensor using All Thin Film Piezoelectric Active Sensor," **Sensors** 2014, 14(12), 22199-22207
* Corresponding author

43. H. J. Kim, J. Kim, O. Zandieh, M.-S. Chae, T. S. Kim, J. H. Lee, J. H. Park, S. Kim and K. S. Hwang, "Piezoelectric layer embedded-microdiaphragm sensors for the determination of blood viscosity and density," **Appl. Phys. Lett.** 105, 153504 (2014)

42. Kyu Hyoung Lee, Soon-Mok Choi, Jong Wook Roh, Sungwoo Hwang, Sang Il Kim, Weon Ho Shin, Hee Jung Park, Jeong Hoon Lee, Sung Wng Kim, and Dae Jin Yang, "Enhanced thermoelectric performance of p-type Bi-Sb-Te alloys by co-doping of Ga and Ag," **Journal of Electronic Materials**, published online 18 Oct 2014

41. Myung-Sic Chae, Sang-Myung Lee, Yong Kyoung Yoo, Soo Hyun Lee, Jinsik Kim, Tae Song Kim, Dong June Ahn, Jeong Hoon Lee^{*}, and Kyo Seon Hwang^{*}, "Fabrication and characterization of piezoelectric driven microdiaphragm resonating sensor for a biosensing application" **J. Electroceram.** 32(4) pp 383-389 (2014) (*: equally contributed corresponding authors)
40. Junghyo Yoon, Youngkyo Cho, Sewoon Han, Jeong Hoon Lee and Seok Chung, "Microfluidic In-Reservoir Pre-concentration using a Buffer Drain Technique" **Lab Chip**, 2014, 14, 2778-2782
39. Sung Il Han, Kyo Seon Hwang, Yong Kyung Yoo, Sang-Myung Lee, and Jeong Hoon Lee, "Flexible and Stretchable Energy Harvesting device using Three-dimensional Polydimethylsiloxane," **Jpn. J. Appl. Phys.** 53 08NC01 * Corresponding author
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