

**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(BioMEMS)/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 EECS (Electrical Engineering and Computer Science), 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: 32-as of Jun 2022)*

**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**

**100 SCI papers** (as of Aug 2022)  
**50 patents holders** (as of Aug 2022) including Korean, US, EU and PCT  
**Co-founder CALTH** (high sensitive diagnostic for COVID-19, influenza, HCV, and HIV)  
(2018~) now, be listed on KONEX, Nov 30, 2021  
**Technical advisor Absology** (2017~) **SG medical** (2022~ )

**Research  
summary  
(as of Aug 2022)**

**h-index: 32**  
100 **SCI papers**  
>50 **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** *Electromagnetic, Electronic physics, Semiconductor fabrication, 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 $\beta$  oligomeric aggregate-degrading drugs", **Nature Communications (2021) 12, Article number: 639** (impact factor: 17.69 & JCR top 7.5%). \* 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: 12.5 & JCR top 2.8%). \* 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, 15, 4, 6386-6394** (impact factor: 18.0 & JCR top 5.6%) \* Corresponding author
4. Cheonjung Kim†, Yong Kyoung Yoo†, Na Eun Lee, Junwoo Lee, Kang Hyeon Kim, Seungmin Lee, Jinhwan Kim, Seong Jun Park, Dongtak Lee, Sang Won Lee, Kyo Seon Hwang, Sung Il Han, Dongho Lee, Dae Sung Yoon\*, Jeong Hoon Lee\*, "Nanoelectrokinetic-assisted Lateral Flow Assay for COVID-19 Antibody Test," **Biosensors and Bioelectronics 212, 114385 (2022)** (impact factor: 12.5 & JCR top 2.8%). \* 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: 12.5 & JCR top 2.8%).\* 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)

**+Main Project** : Project leader (PI: 과제책임자), the Bio & Medical Technology Development Program of the National Research Foundation (NRF) funded by the Korean government (MSIT) (No. 2021M3E5E3080743) Jun 1, 2021~ Dec 31, 2024, total grant : 4.1 billion won (41억원)

## Books

1. **BOOK 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

### [In revision]

107. Seong Jun Park, Seungmin Lee, Dongtak Lee, Na Eun Lee, Jeong Soo Park, Ji Hye Hong, Jae Won Jang, Hyunji Kim, Seokbeom Roh, Gyudo Lee, Dongho Lee, Sung-Yeon Cho, Chulmin Park, Dong-Gun Lee, Raeseok Lee, Dukhee Nho, Dae Sung Yoon, Yong Kyoung Yoo, and Jeong Hoon Lee, "PCR-like Performance of Rapid Test with Permselective Tunable Nanotrap," **Nature Nanotechnology**, \* Corresponding author (in revision)

106. Seungmin Lee, Sunmok Kim, Jeong Soo Park, Hyowon Woo, Dongho Lee, Dae Sung Yoon, Sung-Yeon Cho, Chulmin Park, Yong Kyoung Yoo, Ki-Baek Lee, and Jeong Hoon Lee, "Sample-to-answer Platform for the Clinical Evaluation of COVID-19 using a Deep-learning-assisted Smartphone-based Assay," **Nature Communications**, \* Corresponding author (in revision)

105. Lee, Dongtak; Jung, Hyo Gi; Park, Dongsung; Hong, Ji Hye; Lee, Sang Won; Roh, Seokbeom; Jang, Jae Won; Kim, Yonghwan; Hwang, Kyo Seon; Lee, Jeong Hoon\*; Lee, Gyudo\*; Yoon, Dae Sung\* "Biomimetically engineered amyloid-shelled gold nanocomplexes for discovering  $\alpha$ -synuclein oligomer-degrading drugs," **ACS Applied Materials & Interfaces**, \* Corresponding author (in revision)

104. Seungmin Lee; Yong Kyoung Yoo; Cheonjung Kim; Na Eun Lee; Kang Hyeon Kim; Hyungseok Kim; Dongtak Lee; Sung Il Han; Dongho Lee; Dae Sung Yoon; Jeong Hoon Lee, "Machine-Learning-Assisted Lateral Flow Assay for COVID-19 and Influenza Detection," **Sensors and Actuators B: Chemical**, \* Corresponding author (in revision)

103. Yonghwan Kim, Dongtak Lee, Youngjun Seo, Hyo Gi Jung, Jae Won Jang, Dongsung Park, Insu Kim, Gyudo Lee, Kyo Seon Hwang, Seung-Hyun Kim, Sang Won Lee, Jeong Hoon Lee\*, Dae Sung Yoon\*, "Caco-2 cell-derived biomimetic electrochemical biosensor for cholera toxin detection" **Biosensors and Bioelectronics** \* Corresponding author (in revision)

102. Jinhwan Kim, Cheonjung Kim, Jeong Soo Park, Na Eun Lee, Dae Sung Yoon\*, Yong Kyoung Yoo\*, and Jeong Hoon Lee\* "Point of care test, lateral flow assay, preconcentrator, SARS-CoV-2," **Biosensors and Bioelectronics** \* Corresponding author (in revision)

101. Kang Hyeon Kim, Yong Kyoung Yoo, Na Eun Lee, Junwoo Lee, Cheonjung Kim, Seungmin Lee, Jinhwan Kim, Seong Jun Park, Dongtak Lee, Sang Won Lee, Dae Sung Yoon, Jeong Hoon Lee "Low-powered pH-stable nano-electrokinetically enhanced lateral flow assay for COVID-19 antigen test" **Lab Chip** \* Corresponding author (in revision)

### [published]

100. Cheonjung Kim†, Yong Kyoung Yoo†, Na Eun Lee, Junwoo Lee, Kang Hyeon Kim, Seungmin Lee, Jinhwan Kim, Seong Jun Park, Dongtak Lee, Sang Won Lee, Kyo Seon Hwang, Sung Il Han, Dongho Lee, Dae Sung Yoon\*, Jeong Hoon Lee\*, "Nanoelectrokinetic-assisted Lateral Flow Assay for COVID-19 Antibody Test," **Biosensors and Bioelectronics** **212, 114385 (2022)** (impact factor: 12.5 & JCR top 2.8%). \* Corresponding author

99. Jae Won Jang, Hyunji Kim, Insu Kim, Sang Won Lee, Hyo Gi Jung, Kyo Seon Hwang, Jeong Hoon Lee, Gyudo Lee, Dongtak Lee, and Dae Sung Yoon\*, "Surface Functionalization of Enzyme-Coronated Gold Nanoparticles with an Erythrocyte Membrane for Highly Selective Glucose Assays," **Anal. Chem.** **2022, 94, 17, 6473–6481** (impact factor: 8.0 & JCR top 7.4%).

98. Kang Hyeon Kim, Kyung Wook Wee, Cheonjung Kim, Don Hur, Jeong Hoon Lee & Yong Kyoung Yoo, "Rapid and low-cost, and disposable electrical sensor using an extended gate field-effect transistor for cardiac troponin I detection," **Biomed. Eng. Lett.** **12, 197–203 (2022)** (impact factor: 3.9 & JCR top 49%) (impact factor: 3.5 & JCR top 32.0%) \*Corresponding author

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, 12(8), 903** (impact factor: 3.5 & JCR top 32.0%). \*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** **191: 113406, 2021** (impact factor: 12.5 & JCR top 2.8%).\* 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-Variant Mechanical Strength of Drug-Loaded Collagen Hydrogel Regulated by Hydroxyapatite Nanoparticles", **ACS Omega** **2021, 6, 13, 9269–9278** (impact factor: 4.1 & JCR top 40.5%).
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** \*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, 21(4), 1366**. (impact factor: 3.8 & JCR top 28.9%)
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 Jeonghoon Lee "Origami Paper-based Sample Preconcentration using Sequentially Driven Ion Concentration Polarization", **Lab Chip**, **2021,21, 867-874** (impact factor: 7.5 & JCR top 6.9%) : 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 $\beta$  oligomeric aggregate-degrading drugs", **Nature Communications** (2021) **12, Article number: 639** (impact factor: 17.69 & JCR top 7.5%). \* 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** **2021, 15, 4, 6386–6394** (impact factor: 18.0 & JCR top 5.6%) \* 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 NO<sub>2</sub> Sensor using Amyloid-Graphene Composite", ", **ACS Sensors** **2021, 6, 3, 777–785 (2021)** : Front Cover article(impact factor: 9.6 & JCR top 5.1%) : selected as Front Cover article \*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, 112904 **2021** (impact factor: 12.5 & JCR top 2.8%). \* 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 NO<sub>2</sub> Detection", **ACS Appl. Mater. Interfaces** **2020, 12, 41, 46629–46638** (impact factor: 10.3 & JCR top 14.0%) (Selected as Cover Article)

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** **316**, 1 August 2020, 128094 (impact factor: 9.2 & JCR top 2.3%) \*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" **JOVE-Journal of Visualized Experiments** (158), e61292 (2020), doi:10.3791/61292 (2020). (impact factor: 1.4 & JCR top 69.1%) \*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- $\beta$  detection in plasma sample" **Sensors and Actuators B: Chemical**, **308**, 1 April 2020, 127710 (impact factor: 9.2 & JCR top 2.3%).
83. Hyerin Kim,‡ Kyu Hyoung Lee,‡, 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 (impact factor: 7.5 & JCR top 6.9%) \* 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 (impact factor: 5.2 & JCR top 20.1%) \* 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 (impact factor: 8.0 & JCR top 7.4%) \*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** **9**, 10297 (2019) (impact factor: 4.9 & JCR top 25.3%) \* 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 Al<sub>2</sub>O<sub>3</sub> Layer" **J Nanosci Nanotechno** **19**, 6682-6686 (2019) (impact factor: 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 (impact factor: 14.9 & JCR top 8.9%)
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) (impact factor: 3.9 & JCR top 31.3%)



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, x634** (impact factor: 3.5 & JCR top 32.0%)  
\*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," **Sensors and Actuators B: Chemical**, **268, 485–493 (2018)** (impact factor: 9.2 & JCR top 2.3%)  
\*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- $\beta$  40" **Sensors** **2018, 18(6), 1738** (impact factor: 3.8 & JCR top 28.9%)

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 NO<sub>2</sub> gas sensor," **Sensors and Actuators B: Chemical**, **266, 485–492(2018)** (impact factor: 9.2 & JCR top 2.3%)

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 TiO<sub>2</sub> Sensing Layer for a Hydrogen Gas Sensor" **journal of nanomaterials**, **Article ID 8678519, 8 pages (2018)** (impact factor: 3.37 & JCR top 50.0%)

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 TiO<sub>2</sub> thin film for Highly Sensitive and Selective H<sub>2</sub> Detection with Low Power Consumption," **electronic materials letters**, **May 2018, 14(3), pp 305–313 (2018)** (impact factor: 3.1 & JCR top 58.9%) \*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  $\beta$  Protein by Integration of Electrical Detection and Preconcentrator," **Scientific Reports vol 7, Article number: 14303 (2017)** (impact factor: 4.9 & JCR top 25.3%) \*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 (impact factor: 12.5 & JCR top 2.8%)

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- $\beta$  detection system through medium-changing and noise cancellation system for early diagnosis of the Alzheimer's disease," **Scientific Reports 7, Article number: 8882 (2017)** (impact factor: 4.9 & JCR top 25.3%)

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**. (impact factor: 12.5 & JCR top 2.8%)

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)** (impact factor: 3.8 & JCR top 28.9%)

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**. ISSN: 1949-2553 (impact factor: 4.3 & JCR top 35.7%)

63. (article) Dohwan Lee, Dr Yong Kyoung Yoo and Jeong Hoon Lee, "Simple, fast and highly sensitive colorimetric detection of Zika virus," **Clinical Laboratory International, Jun p20, 2017**: (impact factor: 1.0 & JCR top 87.9%) <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, 17, 245 2017** (impact factor: 7.5 & JCR top 6.9%) \* 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<sub>0.008</sub>Bi<sub>2</sub>Te<sub>2.7</sub>Se<sub>0.3</sub>", **Physica B: Condensed Matter, 517(15) 1–5p, 2017**. (impact factor: 2.9 & JCR top 51.4%)

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 5:11 (2017)**. (impact factor: 1.16) \* 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), pp 12272–12278** (impact factor: 8.0 & JCR top 7.4%) \* Corresponding author

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