

**Room C #103** 8:30-10:30**[Fr-C1]** Atomic Layer Deposition for Emerging Applications I**Session Chairs:**Soo-Hyun Kim (Yeungnam Univ., Korea),  
Sang Woon Lee (Ajou Univ., Korea)**Fr-C1-1 [Invited]** 8:30-9:00Atomic Layer Deposition of 2D-WS<sub>2</sub> for High Performance Gas SensorJusang Park  
Yonsei Univ., Korea**Fr-C1-2 [Invited]** 9:00-9:30

Carbon/Oxide Coated/Wrapped Porous Silicon from Metallothermic Reactions for Lithium Ion Battery Applications

Zhihao Bao, Peibo Gao, and Xi Huang  
Tongji Univ., China**Fr-C1-3 [Invited]** 9:30-10:00

Atomic Layer Deposition for Emerging Display Applications: From Functional Materials to Flexible Devices

Jin-Seong Park, Jiazhen Sheng, Seunghwan Lee, Taehyun Hong, Wanho Choi, and Gunho Baek  
Hanyang Univ., Korea**Fr-C1-4** 10:00-10:15Damage-Reduced Bi-Layer Structure of Gate Dielectric for Improved MoS<sub>2</sub> FET CharacteristicsWhang Je Woo, Il-Kwon Oh, Jeong-Gyu Song, Hanearl Jung, Bo-Eun Park, Jongseo Park, Kyunam Park, and Hyungjun Kim  
Yonsei Univ., Korea**Fr-C1-5** 10:15-10:30Improvement of Electrical Properties of ZrO<sub>2</sub> by Ta Incorporation for Emerging Higher-K MaterialBo-Eun Park, Il-Kwon Oh, Jong Seo Park, Seunggi Seo, and Hyungjun Kim  
Yonsei Univ., Korea**Fr-C1-6** 10:30-10:45Effect of Oxidants on Atomic Layer Deposition of Al<sub>2</sub>O<sub>3</sub>: A DFT StudySeunggi Seo<sup>1</sup>, Taewook Nam<sup>1</sup>, Han-Bo-Ram Lee<sup>2</sup>, Hyungjun Kim<sup>1</sup>, and Bonggeun Shong<sup>3</sup>  
<sup>1</sup>Yonsei Univ., Korea, <sup>2</sup>Incheon Nat'l Univ., Korea, <sup>3</sup>Hongik Univ., Korea**Room D #104** 8:30-10:30**[Fr-D1]** Bioinspired Materials for Artificial Photosynthesis III**Session Chairs:**Uk Sim (Chonnam Nat'l Univ., Korea),  
Yanguang Li (Soochow Univ., China)**Fr-D1-1 [Invited]** 8:30-9:00

Design Principles of Photoelectrochemical Water Splitting Cells

Jihun Oh  
KAIST, Korea**Fr-D1-2 [Invited]** 9:00-9:30

Controlled, Room-Temperature Electrochemical Conversion of Metal-Organic Frameworks into Porous Metal Sulfides with Tailored Composition and Electrocatalytic Water Splitting Activity

Wenhui He, Raya Ifraemov, Arik Raslin, and Idan Hod  
Ben-Gurion Univ., Israel**Fr-D1-3** 9:30-9:45

Electrocatalytic Biomass Value-Addition on Transition Metal Oxide Nanoparticles at Neutral pH

Seungwoo Choi and Ki Tae Nam  
Seoul Nat'l Univ., Korea**Fr-D1-4** 9:45-10:00Controlled Phase Segregation of Binary Alloy for Efficient Electrochemical CO<sub>2</sub> to C<sub>2</sub>H<sub>4</sub> ConversionSang Won Im, Ki Dong Yang, Jun Ho Jang, and Ki Tae Nam  
Seoul Nat'l Univ., Korea**Fr-D1-5** 10:00-10:15

Investigation on the Nano Size Effect of Ultra-Small Manganese Oxide Nanoparticles

Kang Hee Cho, Hong Min Seo, Kang Gyu Lee, Yoon Ho Lee, and Ki Tae Nam  
Seoul Nat'l Univ., Korea**Fr-D1-6** 10:15-10:30

Impedance Analysis in Film-Type Water Oxidation Electrocatalysts using Circuit Model with Havriliak-Negami Function

Hongmin Seo<sup>1</sup>, Kyoungsuk Jin<sup>1</sup>, Kang Hee Cho<sup>1</sup>, Kang-Gyu Lee<sup>1</sup>, Dang Thanh Nguyen<sup>2</sup>, Jong Sook Lee<sup>2</sup>, and Ki Tae Nam<sup>1</sup>  
<sup>1</sup>Seoul Nat'l Univ., Korea, <sup>2</sup>Chonnam Nat'l Univ., Korea