

Jae-Young Choi Master candidate

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RESEARCH INTERESTS

- **Solar cell application:** Nano-particle(CIGS) coating Thin film, Solution-type(CIS/CIGS) coating Thin film Solar cell(II-Gen.), Dye-Sensitized Solar cell(III-Gen.)
- **Graphene/CNT thin-film coating applications:** Water purification, Desalination
- **Titanium dioxide(TiO₂) thin-films coating applications:** Antibacterial activity, Water purification, Self-cleaning, Dye-Sensitized Solar cell(III-Gen.)
- **Oil-water separation membrane**
- Electrohydrodynamic Spray Coating for thin-film applications
- Electro-spinning
- Oxide film coating for water splitting

EDUCATION

- **Master of Science in Mechanical Engineering**, Feb. 2015 (4.39/4.5)
Korea University, Seoul, Korea
Advisor: Prof. Sam Sukgoo Yoon
- **Bachelor of Science in Mechanical Engineering**, Feb. 2013 (3.42/4.5)
Korea University, Seoul, Korea

PUBLICATION

International Journal Papers

1. Hyun Yoon¹, Mukund G. Mali¹, **Jae Young Choi**, Min-woo Kim, Sung Kyu Choi, Hyunwoong Park, Salem S. Al-Deyab, Mark T. Swihart, Alexander L. Yarin^{*}, Sam S. Yoon^{*}, Nano-textured Pillars of Electrospayed Bismuth Vanadate for Efficient Photoelectrochemical Water Splitting, Energy & Environmental Science (SCI,IF=15.490), **to-be-submitted-soon**

2. Hyun Yoon, Seung-Heon Na, **Jae-Young Choi**, Sanjay S. Latthe, Mark T. Swihart, Salem S. Al-Deyab, Sam S. Yoon*, Gravity-driven hybrid membrane for oleophobic-superhydrophilic oil-water separation and water purification by graphene, **Langmuir**(SCI,IF=4.187), **in press**
 3. Mukund G. Mali¹, Hyun Yoon¹, **Jae-Young Choi**, Min Woo Kim, Ha Yong Kim, Seongpil An, Byung Cheol Lee, Byung Nam Kim, Ji Hyun Park, Salem S. Al-Deyab, Sam S. Yoon*, Enhanced solar water splitting of electron beam irradiated titania photoanode by electrostatic spray deposition, **Applied surface science**(SCI, IF=2.538), **in press**
 4. Hyun Yoon, Seung-Heon Na, **Jae Young Choi**, Min Woo Kim, Ha Yong Kim, Hui Sang Ahn, Byoung Koun Min, SeJin Ahn, Jae Ho Yun, Jihye Gwak, KyungHoon Yoon, Sanjay S. Kolekard, Maikel F.A.M.van Hest, Salem S. Al-Deyab, Mark T. Swihart, Sam S. Yoon*, Carbon- and Oxygen-Free Cu(InGa)(SSe)₂ Solar Cell with a 4.63% Conversion Efficiency by Electrostatic Spray Deposition, **ACS Applied Materials and Interfaces**(SCI,IF=5.900), 6(11), 8369-8377, 2014
 5. Hyun Yoon¹, Bhavana N. Joshi¹, Seung-Heon Na, **Jae-Young Choi**, Sam S. Yoon*, Photodegradation of methylene blue of niobium-doped zinc oxide thin films produced by electrostatic spray deposition, **Ceramics International**(SCI,IF=2.086), 40(5), 7567-7571, 2014
 6. Bhavana Joshi¹, Hyun Yoon¹, Seung-Heon Na, **Jae-Young Choi**, Sam S. Yoon*, Enhanced Photocatalytic Performance of Graphene-ZnO Nanoplatelet Composite Thin Films Prepared by Electrostatic Spray Deposition, **Ceramics International**(SCI,IF=1.789), 40(2), 3647-3654, 2014
- Note: (*)*, corresponding author / (¹), equal contribution

Proceeding/Conference Papers

1. **Jae-Young Choi**, Hyun Yoon and Sam S. Yoon*, 3D Nanostructured CIS₂ Thin Film Solar Cell by Electrospinning and Electrospray, **The Global Photovoltaic Conference 2014(GPVC 2014)** Busan, Korea, Nov. 10-11, 2014(poster)
2. Hyun Yoon, **Jae-Young Choi**, Min Woo Kim, Ha Yong Kim, SeJin Ahn, Jae Ho Yun, Jihye Gwak, KyungHoon Yoon, Sam S. Yoon*, CuInS₂ Nanofibers of 3D Nanostructure by Electrospinning for Efficient Thin Film Solar Cell via Enhanced Light Diffusion, Charge Separation and Transfer, **Korea Photovoltaic Society(KPVS 2014)**, Daegu, Korea April 2-3, 2014(poster)

3. Hyun Yoon, Jong-Gun Lee, Seongpil An, **Jae-Young Choi**, You-Hong Cha, Changmin Lee, Sam S. Yoon*, Enhanced Photodegradation Performance of Nb doped ZnO Thin Films prepared by Electrostatic Spray Deposition, **Electrochemical Conference on Energy & the Environment (ECEE 2014)**, Shanghai, China, Mar. 13-16, 2014(poster)
4. Hyun Yoon, **Jae-Young Choi**, Seongpil An, Sam S. Yoon*, SeJin Ahn, Jae Ho Yun, Jihye Gwak, KyungHoon Yoon, Copper-Indium Nanofibers Nanotextured by Electroplating, **The Global Photovoltaic Conference 2013(GPVC 2013)**, Busan, Korea, Nov. 23-26, 2013(poster)
5. Hyun Yoon, Seung-Heon Na, **Jae-Young Choi**, Sam S. Yoon*, Hui Sang Ahn, Byoung Koun Min, SeJin Ahn, Jae Ho Yun, Jihye Gwak, KyungHoon Yoon, Electrostatically Sprayed Cu(InGa)(SSe)₂ Thin Film Solar Cell with 4.63% Efficiency, **The Global Photovoltaic Conference 2013(GPVC 2013)**, Busan, Korea, Nov. 23-26, 2013(poster)

AWARD

- Siemens PLM contents, **excellence award**
- Korea University creative machine design, **championship**
- Korea University Partners for the Advancement of Collaborative Engineering Education, **Silver prize**

CERTIFICATE

- MIDAS Technical Lecture about flow & heat transfer analysis
- Machine design Industrial Engineer
- Mechatronics Industrial Engineer
- Computer application process Engineer

FUND GRANTS

- BK21 plus 2013.9~2015.2
- Research Assistant, 2013 Fall Semester

REFERENCE

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