

MASTER. CANDIDATE

CHA, YOU-HONG



Solar Cell and Aerosol Science Lab.

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EDUCATION

Korea University, Seoul, Korea

Cumulative :4.38 /4.5

Master of Science in Mechanical Engineering,

Advisor : Prof. Sam S. Yoon

University of Windsor, Windsor, Ontario, Canada

Cumulative : 3.5/4.5

Bachelor of Science in Mechanical Engineering Automotive, 2005-2012

RESEARCH

Solar cell: Silicon Solar cell(I-Gen.), Thin film Solar cell(II-Gen.), Dye-Sensitized Solar cell(III-Gen.)

Photocatalysis applications : Antibacterial activity, Water purification, Self-cleaning

Thin film coating process : Cold Gas Dynamic Spray (CGDS) & Aerosol Deposition (AD)

Materials research : Graphene(TCO, Heat sink), Lithium ion battery(Anode), Ceramic(TiO₂), Metal(Copper)

Simulation research : Ansys workbench(static structure, Mechanical APDL)

PUBLICATIONS

1. Jong-Gun Lee, Do-Yeon Kim, Jung-Jae Park, **You-Hong Cha**, Joshua Y. Yoon, Hyo Sang Jeon, Byoung Koun Min, Mark T. Swihart, Sung Ho Jin, Salem Al-Deyab, Sam S. Yoon*, "Graphene-titania hybrid photoanodes produced by supersonic kinetic aerosol deposition for solar water splitting", *Journal of the American Ceramic Society*, published online : 22 Aug. 2014
2. Do-Yeon Kim, Suman Sinha-Ray, Jung-Jae Park, Jong-Gun Lee, **You-Hong Cha**, Sang-Hoon Bae, Jong-Hyun Ahn, Yong Chae Jung, Soo min Kim, Alexander L. Yarin, Sam S. Yoon*, " Self-healing reduced graphene oxide films by supersonic kinetic spraying", *Advanced Functional Materials*, 24(31), pp. 4986-4995, 2014

3. Do-Yeon Kim, Bhavana N. Joshi, Jung-Jae Park, Jong-Gun Lee, You-Hong Cha, Tae-Yeon Seong, Suk in Noh, Hyo-Jin Ahn, Sam S. Yoon*, "Graphene-titania films by supersonic kinetic spraying for enhanced performance of dye-sensitized solar cells", *Ceramics international*, 40(7), Part B, pp. 11089-11097, 2014
4. Aluminum oxide dielectric layer of powder-processed by the aerosol deposition, *under preparation*
5. Numerical Investigation on effect of pressure from explosive blast waves in petrochemical refinery plants, *under preparation*

Note: (*)*, corresponding author

PRESENTATIONS

1. You-Hong Cha, Boo Hyoung Bang, Jung-Jae Park, Sam S. Yoon*, Numerical Investigation on Effect of Pressure from Explosive Blast waves in Petrochemical Refinery Plants, *KSME(The Korea Society of Mechanical Engineers)*, Gwangju, Korea, Nov. 11-14, 2014
2. 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
3. Jung-Jae Park, Do-Yeon Kim, Jong-Gun Lee, You-Hong Cha, Sam S. Yoon*, Tuning Hydrophobicity Using Cold Sprayed Teflon_Titania Composite Thin Films, *Global Photovoltaic Conferences 2013 (GPVC 2013)*, Busan, Korea, Nov. 23-26, 2013
4. Jung-Jae Park, Do-Yeon Kim, Jong-Gun Lee, You-Hong Cha, Sam S. Yoon*, Titania Composite Thin Films for Acute Inkjet Printing, *Global Photovoltaic Conferences 2013 (GPVC 2013)*, Busan, Korea, Nov. 23-26, 2013

Note: (*)*, corresponding author

SKILLS

Device fabrication: Aerosol deposition, Cold spray thin film deposition

Measurement techniques: Atomic force microscopy(AFM), Scanning electron microscopy(SEM), X-ray diffraction(XRD), UV-vis spectrophotometer, Schlieren method, Dynamic water contact angle measurement, Fourier Transform Infrared Spectroscopy (FTIR)

Computational simulation: Computational Fluid Dynamics (Fluent, Gambit), Computational Structural Analysis(Ansys static structure, Mechanical APDL)

Computer Proficiency: Windows 98 - Window 7, MS – Office 2003 - 2010, Origin 8

REFERENCE

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