

Colloquium

Department of Engineering
and System Science,
Institute of Nuclear
Engineering and Science,
National Tsing Hua University

10 Years of Energy Research in AIST: Bridging the Gap between Academia and Industry

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1. Self-introduction: Education and Working Experience.
2. Introduction of AIST and Our group: Missions, Budget...etc.
3. Biomass Conversion Technology: Upgrading of Biodiesel fuel to H-FAME.
4. Energy Carrier Technology: Ammonia Synthesis.
5. Synthetic Fuel Technology: Direct Air Capture and Methanation.
6. CO_x-free Hydrogen Production Technology: Methane decomposition.
7. Photoelectrochemical Technology: Glycerol Oxidation.
8. Industrialization Challenges: Case Studies.



<https://sites.google.com/view/shihyuanchen/home/energy-catalyst-technology-group>

15:30-17:20 P.M., Wed., Sept. 21st, 2022
Asynchronous online talk

Biography:



Education:

PhD. at National Taiwan University, Taiwan.
(2004-2008)

M.S. at National Taiwan University, Taiwan
(2002-2004)

B.S. at National Tsing-Hua University, Taiwan
(1999-2002)

Selected Publications:

1. **Shih-Yuan Chen,*** Chih-Li Chang, Masayasu Nishi, Wei-Chih Hsiao, Yves Ira A. Reyesd, Hiroyuki Tatenoa, Ho-Hsiu Chou,* Chia-Min Yang,* Hsin-Yi Tiffany Chen,* Takehisa Mochizuki, Hideyuki Takagi, and Tetsuya Nanba. Unraveling the active sites of Cs-promoted Ru/γ-Al₂O₃ catalysts for ammonia synthesis, *Applied Catalysis B: Environmental*, 2022, 310, 121269.
2. Fumihiko Kosaka,* Yanyong Liu, **Shih-Yuan Chen**, Takehisa Mochizuki, Hideyuki Takagi, Atsushi Urakawa, Koji Kuramoto*. Enhanced Activity of Integrated CO₂ Capture and Reduction to CH₄ under Pressurized Conditions Towards Atmospheric CO₂ Utilization, *ACS Sustainable Chemistry & Engineering* 2021, 9, 3452-3463.
3. **Shih-Yuan Chen,*** Albert Chang, Artita Na Rungsi, Lalita Attanatho, Chih-Li Chang, Jyun-Hong Pan, Amornrat Suemanothan, Takehisa Mochizuki, Takagi Hideyuki, Chia-Min Yang, Apanee Luengnaruemitchai, Ho-Hsiu Chou. Superficial Pd nanoparticles supported on carbonaceous SBA-15 as efficient hydrotreating catalyst for upgrading biodiesel fuel, *Applied Catalysis A:General* 2020, 602, 117707.

Research Projects:

- Research and development of the technology of integrated manufacturing process for liquid synthetic fuel from CO₂ (2021 ~)
- Research and development of hydrogen production technology by thermal decomposition of methane (2018-)
- Research on development and evaluation of ammonia synthesis catalyst (2016-2018)
- Research on basic technology for converting non-food biomass into fuel for transportation (2012-2015)

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