CHEN Xiaoyu (陳　曉宇)

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EDUCATION

Nagoya University (Nagoya, Japan) 2022.04 – 2025.03
Chemical Systems Engineering – Doctor of Engineering (Ph.D. in Engineering)

Hokkaido University (Sapporo, Japan) 2024.07 – 2024.09
Chemical Systems Engineering – Visiting student

Nagoya University (Nagoya, Japan) 2020.04 – 2022.03
Chemical Systems Engineering – Master of Engineering

Huizhou University (Huizhou, China) 2015.09 – 2019.06
Chemical Engineering and Technology – Bachelor of Engineering

RESEARCH & TEACHING EXPERIENCE

Institute of Science Tokyo 2025.04 – present
KATO Yukitaka/TAKASU Hiroki's Lab **Researcher**
Project: *Carbon Neutrality System for Mobility (Vehicles, etc.)* (CO_2 Recovery and Resource Utilization in e-Fuel Production and Application)

Nagoya University 2022.04 – 2025.03
KITA Hideki's Lab **PhD Researcher / JSPS Research Fellowship**
Project: *Integrated Research on Redox-type Chemical Heat Storage Systems Targeting Medium-high Temperature Regions* (prepared honeycomb-structure heat storage module based on redox-type chemical heat storage materials; designed a tubular furnace reactor base on honeycomb module; optimized module and reactor design using numerical simulation)

Nagoya University 2020.04 – 2022.03
Aichi Knowledge Hub Aichi Priority Research Projects **Research Assistant**
Project: *Energy Management Technology Based on Thermal / Electric Batteries* (Screened and developed redox-type chemical heat storage materials for medium-high temperature; Regulated the operating temperature of existing redox-type heat storage materials)

Nagoya University 2022.05 – present
Nagoya University Mathematical and Data Science Center **Qualified Teaching Assistant**
Project: *Practical Data Scientist Training Program* (Q&A for basic courses; Guiding groups through real-world data science related topics)

SELECTED PUBLICATIONS

1. **X. Chen**, *et al.*, Heat Release Demonstration of a Novel $CuMn_2O_4$ / $CuMnO_2$-Based Honeycomb Structure Module for Thermochemical Energy Storage. *ACS Sustainable Chem. Eng.*, 13(15), 5580–5591 (2025).

2. **X. Chen**, *et al.*, Development of Redox-type Thermochemical Energy Storage Module: A Support-Free Porous Foam Made of $CuMn_2O_4/CuMnO_2$ Redox Couple. *Chem. Eng. J.*, 485, 149540 (2024).
3. **X. Chen**, *et al.*, An In-depth Oxidation Kinetic Study of $CuCr_xMn_{1-x}O_2$ (x = 0, 0.1, 0.3) for Thermochemical Energy Storage at Medium-high Temperature. *Sol. Energy Mater. Sol. Cells*, 260, 112495 (2023).
4. **X. Chen**, *et al.*, Effect of Cr Addition on Cu−Mn Spinel/Delafossite Redox Couples for Medium-High Temperature Thermochemical Energy Storage. *ACS Appl. Energy Mater.*, 5(5), 5811–5821 (2022).
5. **X. Chen**, *et al.*, Exploring Cu-Based Spinel/delafossite Couples for Thermochemical Energy Storage at Medium-high Temperature. *ACS Appl. Energy Mater.*, 4(7), 7242–7249 (2021).
6. **X. Chen**, *et al.*, Investigation of Sr-based Perovskites for Redox-type Thermochemical Energy Storage Media at Medium-high Temperature. *J. Energy Storage*, 38, 102501 (2021).

SELECTED CONFERENCES

1. **X. Chen**, *et al.*, Demonstration of Cu-Mn composite oxides honeycomb structure module for medium-high temperature thermochemical energy storage, *The 7th International Symposium on Innovation Materials and Processes in Energy Systems (IMPRES2025)*, Sendai, Oct 2025.
2. **X. Chen**, *et al.*, Development of $CuMn_2O_4/CuMnO_2$-based Porous Structure Thermochemical Energy Storage Module, *The third Asian Conference on Thermal Sciences (3rd ACTS)*, Shanghai, Jun 2024.
3. **X. Chen**, *et al.*, Oxidation Kinetic Study of Cu-Cr-Mn Spinel/delafossite for Redox-type Thermochemical Energy Storage at Medium-high Temperature, *Materials Today Conference 2023*, Singapore, Aug 2023.
4. **X. Chen**, *et al.*, Screening and Development of Redox-type Thermochemical Energy Storage Material for Medium-high Temperature Range, *The Sixth International Symposium on Innovative Materials and Processes in Energy Systems (IMPRES 2022)*, Barcelona, Spain, Oct 2022.
5. **X. Chen**, *et al.*, Screening of Redox-type Chemical Heat Storage Material for Medium-high Temperature Region, *The 2nd Asian Conference on Thermal Sciences (2nd ACTS)*, Fukuoka, Japan, Oct 2021.

HONORS AND AWARDS

- All-Japan Federation of Overseas Chinese Professionals Scholarship 2024 (Aug 2024)
- Nagoya University, Outstanding Graduate Student Award (Jul 2024)
- Japan Society for the Promotion of Science (JSPS) Special Research Fellow DC2 (Apr 2023–Mar 2025)
- Nitto Academic Promotion Foundation, the 39th Overseas Dispatch Grant (Nov 2022)
- Nagoya University Akasaki Student Award for the Year 2022 (Aug 2022)
- Tokai National University Institution Fusion Pioneering Next Generation Researcher Accepted (Apr 2022–Mar 2023)
- Nagoya University, Graduate School of Engineering, Chemical Systems Engineering, Best No.2 Master's Thesis Review and Presentation Award (Mar 2022)
- Society of Automotive Engineers of Japan, Graduate School Research Award for the Year 2021 (Mar 2022)