



# Research Field: Biomineralization, Material recycling

## Focused Field: SOLID WASTE UTILIZATION, BIOMINERALIZATION

### SHORT BIO

In 2015, I was pursuing a master's degree at University of Science and Technology Beijing (USTB), mainly studying the leaching of rare and precious metals.

In 2018, I started my PhD studies at the Institute for Advanced Materials and Technology, USTB, China, under the direction of Prof. Shengen Zhang.

In 2021, I accepted a post-doctoral position at the USTB as an assistant professor. I have been researching material recycling.

In 2023, I came to Macau University of Science and Technology supported by the Macao Young Scholars Program and led by Prof. André Antunes to study the cementation between microorganisms and lunar soil particles.

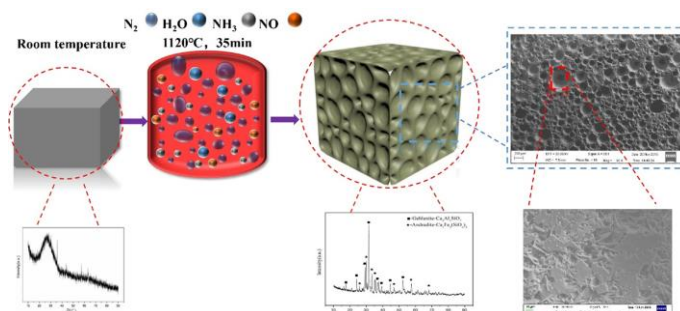
### Post Doctoral

## Junjie Zhang



PhD: Materials Science and Engineering– University of Science and Technology Beijing

Masters: Metallurgical engineering –University of Science and Technology Beijing



Preparation of glass foams- (Zhang J., et al., 2020, Constr. Build. Mater.)

### KEY PUBLICATIONS (first author)

- Zhang, J., et al., 2022. Hierarchically porous glass–ceramics by alkaline activation and crystallization from municipal solid waste incineration ashes. *Journal of Cleaner Production***
- Zhang, J., et al., 2021. A review of glass ceramic foams prepared from solid wastes: Processing, heavy-metal solidification and volatilization, applications. *Science of the Total Environment***
- Zhang, J., et al., 2022. Co-vitrification of municipal solid waste incinerator fly ash and bottom slag: Glass detoxifying characteristics and porous reformation. *Ecotoxicology and Environmental Safety***
- Zhang, J., et al., 2020. Degradation technologies and mechanisms of dioxins in municipal solid waste incineration fly ash: A review. *Journal of Cleaner Production***
- Zhang, J., et al., 2020. Preparation and characterization of glass ceramic foams based on municipal solid waste incineration ashes using secondary aluminum ash as foaming agent. *Construction and Building Materials***
- Zhang, J., et al., 2022. A novel approach for preparing glass ceramic foams from MSWI fly ash: Foaming characteristics and hierarchical pore formation mechanism. *Journal of Materials Research and Technology***

### PROFESSIONAL EXPERIENCE

Ongoing – 2023 – Macau University of Science and Technology, Macao (China) – Post doctoral.

Ongoing – 2021 – University of Science and Technology Beijing, Beijing (China) – Post doctoral.

### GRANTS

National NSFC – 2023-2025 – Principal Investigator, No:52204413

Structure-activity relationship of pore/amorphous/crystallite in glass-ceramic foams and its effect on heavy metal solidification

Guangdong NSFC – 2022-2024 – Principal Investigator, No:2021A1515110998

Study on multiphase reaction coupling and toxic ion curing mechanism of glass ceramic foams derived from secondary aluminum ash

China Postdoctoral Science Foundation(CPSF) – 2022-2024 – Principal Investigator, No:2022M710349

Structure activity regulation and heavy metal solidification mechanism of foam glass ceramics prepared from waste incineration fly ash

CPSF-FDCT-2023-2025-Macao Young Scholars Program, No:AM2022024 -Supervisor: Prof. André Antunes



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