



Ya-Fan Chen

Otto-Schott-Institute for Materials Research

Friedrich Schiller University Jena
Löbdergraben 32
D-07743 Jena

Phone: +49 (0)3641 9-47785

E-Mail: ya-fan.chen@uni-jena.de

Title PhD Project: Development of a semantic knowledge base for digitized antimicrobial biomaterials

Main Research Interests

- Digitization of different material classes, including glass, polymers, and biomaterials
- Conducting DFT studies to explore defects and their effects on materials
- Developing web/desktop interfaces for efficient data access and management

Methodological Experiences

- Python, JavaScript, HTML/CSS, and SPARQL
- Ontology creation and editing with Protégé
- Developing web applications and APIs with Docker and Python web frameworks like Flask and FastAPI.
- Utilizing TURBOMOLE for performing DFT calculations

Curriculum Vitae

Education:

Since 08/2020

Doctoral candidate

Otto Schott Institute of Materials Research
Friedrich Schiller University Jena, Germany
(with Prof. Dr. Marek Sierka and Prof. Dr. Marc Thilo Figge)

09/2018 – 07/2019

Master of Science in Optics and Photonics

National Central University, Taiwan

09/2014 – 06/2018

Bachelor of Science in Optics and Photonics

National Central University, Taiwan

Awards:

05/2017

Honorable Mention in Creative Software Applications Contest
Taiwan

Publications

Peer-reviewed original papers

- Y.-F. Chen, C. Schroeder, C. M. Lew, S. I. Zones, H. Koller, M. Sierka. Cooperativity of Silanol Defect Chemistry in Zeolites. *Phys. Chem. Chem. Phys.* 2022, 25, 478–485.
- C.-E. Lin, Y.-H. Lu, Y.-T. Lin, Y.-F. Chen, C.-P. Sun, C.-C. Chen. All optical XOR logic gate formed by unsupervised optical neuron networks. *Neurocomputing.* 2021, 460, 205–210.

Non-peer-reviewed articles, conference abstracts, theses

- Y.-F. Chen, M. Zerdani, M. Sierka, M.T. Figge. Antimicrobial knowledge bases and image analysis – an overview. The 7th European Symposium on Biomaterials and Related Areas - BioMAT 2023, 3-4 May 2023, Weimar, Germany.
- Y.-F. Chen. Glass Ontology for Data-driven High-throughput Glass Development. Materials Science and Engineering Congress 2022 (MSE 2022). 27-29 September 2022, Darmstadt, Germany.
- Y.-F. Chen, F. Arendt, M. Sierka. Glass Ontology and Machine Learning for Data-driven High-throughput Glass Development. 12th Triennial Congress of the World Association of Theoretical and Computational Chemists (WATOC 2020), 3-8 July 2022, Vancouver, Canada.
- Y.-F. Chen, H. Koller, M. Sierka. DFT Calculations of Defect Sites in Zeolite SSZ-55. 12th Triennial Congress of the World Association of Theoretical and Computational Chemists (WATOC 2020), 3-8 July 2022, Vancouver, Canada.
- “Study of Nano-optics Neural Networks” Master Thesis, 2019, National Central University, Taiwan.
- Y.-F. Chen, C.-C. Chen. Nano-optics neural networks. Annual Meeting of the Physical Society of Taiwan. 23-25 January 2019, National Chiao Tung University, Hsinchu, Taiwan.