

## Asst. Prof. IRMAK SARGIN

### Personal Information

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### International Researcher IDs

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### Education Information

Doctorate, Iowa State University of Science and Technology, United States Of America 2011 - 2015

Postgraduate, Middle East Technical University, Graduate School of Natural and Applied Sciences, Turkey 2008 - 2011

Undergraduate, Middle East Technical University, Faculty of Engineering, Department of Metallurgical and Materials Engineering, Turkey 2003 - 2008

### Research Areas

Metallurgical and Materials Engineering, Glass Technology and Glass Ceramics, Physical Metallurgy, Metallic Materials, Structure-Property Relationship

### Academic Titles / Tasks

Assistant Professor, Middle East Technical University, Faculty of Engineering, Department of Metallurgical and Materials Engineering, 2021 - Continues

### Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Putting error bars on density functional theory**  
Yuk S. F., SARGIN I., Meyer N., Krogel J. T., Beckman S. P., Cooper V. R.  
Scientific Reports, vol.14, no.1, 2024 (SCI-Expanded)
- II. **Flow mechanisms and their influence on the properties of EGaIn-graphene-poly(ethylene) oxide composites during material extrusion-based additive manufacturing**  
Tandel R., SARGIN I., Gozen B. A.  
Additive Manufacturing, vol.84, 2024 (SCI-Expanded)
- III. **Mapping of composition-rheology relationships in polymer composite-type precursors**  
Grover C. A., Bernal C. B., SARGIN I., Beckman S. P., Gozen B. A.  
Polymer Composites, 2024 (SCI-Expanded)
- IV. **Multivariate analysis: An essential for studying complex glasses**  
SARGIN I., McCloy J. S., Beckman S. P.  
JOURNAL OF THE AMERICAN CERAMIC SOCIETY, vol.105, no.12, pp.7196-7210, 2022 (SCI-Expanded)

- V. **Predicting nepheline precipitation in waste glasses using ternary submixture model and machine learning**  
Lu X., Sargin I., Vienna J. D.  
JOURNAL OF THE AMERICAN CERAMIC SOCIETY, vol.104, no.11, pp.5636-5647, 2021 (SCI-Expanded)
- VI. **A data-driven approach for predicting nepheline crystallization in high-level waste glasses**  
Sargin I., Lonergan C. E., Vienna J. D., McCloy J. S., Beckman S. P.  
JOURNAL OF THE AMERICAN CERAMIC SOCIETY, vol.103, no.9, pp.4913-4924, 2020 (SCI-Expanded)
- VII. **Modeling the effect of dose rate and time on crosslinking and scission in irradiated polyethylene**  
Sargin I., Beckman S. P.  
IEEE TRANSACTIONS ON DIELECTRICS AND ELECTRICAL INSULATION, vol.27, no.3, pp.731-738, 2020 (SCI-Expanded)
- VIII. **A data-informatics method to quantitatively represent ternary eutectic microstructures**  
Sargin I., Beckman S. P.  
SCIENTIFIC REPORTS, vol.9, 2019 (SCI-Expanded)
- IX. **Modeling of reaction-diffusion transport into a core-shell geometry**  
King C. C., Brown A. A., Sargin I., Bratlie K. M., Beckman S. P.  
JOURNAL OF THEORETICAL BIOLOGY, vol.460, pp.204-208, 2019 (SCI-Expanded)
- X. **Crystal orientation relationships in ternary eutectic Al-Al<sub>2</sub>Cu-Ag<sub>2</sub>Al**  
Steinmetz P., Dennstedt A., ŞEREFOĞLU KAYA M., Sargin I., Genau A., Hecht U.  
ACTA MATERIALIA, vol.157, pp.96-105, 2018 (SCI-Expanded)
- XI. **Influence of growth velocity variations on the pattern formation during the directional solidification of ternary eutectic Al-Ag-Cu**  
Hoetzer J., Steinmetz P., Dennstedt A., Genau A., Kellner M., Sargin I., Nestler B.  
ACTA MATERIALIA, vol.136, pp.335-346, 2017 (SCI-Expanded)
- XII. **Post-solidification Effects in Directionally Grown Al-AgAl-AlCu Eutectics**  
Sargin I., Genau A. L., Napolitano R. E.  
JOURNAL OF PHASE EQUILIBRIA AND DIFFUSION, vol.37, no.1, pp.75-85, 2016 (SCI-Expanded)

## Articles Published in Other Journals

- I. **Machine learning to predict refractory corrosion during nuclear waste vitrification**  
Smith-Gray N. J., Sargin I., Beckman S., McCloy J.  
MRS ADVANCES, vol.6, no.4-5, pp.131-137, 2021 (ESCI)

## Metrics

Publication: 14  
 Citation (WoS): 101  
 Citation (Scopus): 110  
 H-Index (WoS): 6  
 H-Index (Scopus): 6

## Congress and Symposium Activities

Glass and Optical Materials Division (GOMD), Attendee, Maryland, United States Of America, 2022