

KAUSTHUBHARAM

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EDUCATION

Purdue University
Doctor of Philosophy
Department of Mechanical Engineering

Aug 2023 - 2027

Seoul National University
Master of Science
Department of Mechanical Engineering

Sept 2021 - Aug 2023

RESEARCH AREA

Energy storage devices, Solid-state batteries, Electroanalytics, Thermal stability

PUBLICATIONS

BS Vishnugopi, Kausthubharam, AK Sharma, PP Mukherjee, et al. *Thermal Stability Landscape of Solid-State Batteries*
ACS Energy letters (SCI, IF 18.2) (Under review)

S Kim, Kausthubharam, S-H Ahn. *Remote-field modulated electrochemical actuator*
Advanced Materials (SCI, IF 26.8) (Under review)

Kausthubharam, BS Vishnugopi, AJ Alujagge, PP Mukherjee, et al. *Mechanistic Understanding of Thermal Stability and Safety in Lithium Metal Batteries*
Chemical Reviews (SCI, IF 55.8)

Kausthubharam, BS Vishnugopi, A Sengupta, PP Mukherjee, et al. *Perspective on Thermal Stability and Safety of Sodium-Ion Batteries*
ACS Energy letters (Editor's Choice) (SCI, IF 18.2)

S Sudhakaran, Kausthubharam, BS Vishnugopi, VG Pol, PP Mukherjee. *High-Entropy Electrolytes in Sodium-Ion Batteries: Performance and Safety Perspective*
ACS Energy letters (SCI, IF 18.2)

Kausthubharam, A Ayyaswamy, BS Vishnugopi, PP Mukherjee, et al. *Mechanistic Interrogation of Li Stripping under Dynamic Operation in Solid-State Batteries*
ACS Energy letters (SCI, IF 18.2)

Kausthubharam, PK Koorata, S Panchal, et al. *Investigation of the thermal performance of biomimetic minichannel-based liquid-cooled large format pouch battery pack*
J Energy Storage (SCI, IF 8.9)

Kausthubharam, J-K Heo, S-H Ahn, et al. *Scale effects on the fabrication and control of remotely-powered microactuators*
Int J Robot. Res. (SCI, IF 9.5)

Kausthubharam, Koorata PK, S Panchal. *An efficient liquid cooling strategy based on mini-channel cold plates for large-sized LiFePO₄ pouch cell*
Appl. Therm. Eng. (SCI, IF 6.1)

Kausthubharam, Koorata PK, S Panchal, R Fraser, M Fowler. *Combined influence of concentration-dependent properties, local deformation and boundary confinement on the migration of Li-ions in low-expansion electrode particle during lithiation*
J Energy Storage (SCI, IF 8.9)

Kausthubharam, Koorata PK, Chandrasekaran N. *Numerical investigation of cooling performance of a novel air-cooled thermal management system for cylindrical Li-ion battery module*
Appl Therm Eng (SCI, IF 6.1)

Kausthubharam, Koorata PK, Chandrasekaran N. *Impact of mechanical stiffening and softening on the spatial distribution of lithium ions in spherical electrode particle under galvanostatic charging*
Int J Energy Res (SCI, IF 5.162)

CONFERENCES

Stripping Behavior of Solid-State Batteries Under Dynamic Discharge Loads for Electric Vertical Take-Off and Landing Aircraft
International conference

Kausthubharam, A Ayyaswamy, BS Vishnugopi, PP Mukherjee, et al. 248th ECS Meeting, Chicago, US.

Untethered actuation of Ionic Polymers for Underwater Micro Robotics: Principles and Applications
International conference

S Kim, Kausthubharam and S-H. Ahn, PRESM 2024 International Conference, Busan, KR.

Design and control of Electroactive polymer-based actuator using remote electric field
International conference

Kausthubharam and S-H. Ahn, Proceedings of the 9th International Conference on Manufacturing, Machine Design and Tribology 2023, Jeju, KR.

Reversible Ion Implantation of Electroactive Polymers by Application of Local Electric Field
Domestic conference

Kausthubharam and S-H. Ahn, KSPE 2023 Spring Conference, Ramada Plaza, Jeju, KR.

Ionic Polymer Metal Composite (IPMC) actuated hybrid micromixer for mixing efficiency enhancement
Domestic conference

Sophia Castro, Kausthubharam and S-H. Ahn, KSPE 2023 Spring Conference, Ramada Plaza, Jeju, KR.

Realization of glass surface structure color through microscale hydrogel printing
Domestic conference

W-J. Kim, J-W. Park, Y.J. Quan, Kausthubharam and S-H. Ahn, KSPE 2022 Fall Conference, EXCO, Daegu, KR.

Electroactive Polymer Actuator Using Electrolyte Solution and Remote Electric Field
Domestic conference

Kausthubharam and S-H. Ahn, KSPE 2022 Fall Conference, EXCO, Daegu, KR.

HONORS/AWARDS

Graduate Scholarship for Excellent Foreign Students

OIA, Seoul National University

Sep 2021- Jul 2023

Outstanding Master's Thesis Award

Department of Mechanical Engineering, Seoul National University

29 Aug 2023