

ThermoBuild Brief

A Newsletter Featuring Leading Voices in Thermoelectrics and Building Energy Technology

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Research Highlights

We recently obtained a patent for the development of novel facade systems that integrate thermoelectric materials. We initiated this research almost a decade ago, by developing and testing prototypes, simulating heat transfer and temperature outputs, and modelling behavior in comparison to conventional HVAC systems. We published a number of research publications on this topic over the last ten years, but the recent patent is a culmination of extensive work, research and development.

Expert Spotlight



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Technical Insight

- Active facade systems that improve building performance and generate energy for buildings' operation have the potential to transform the architectural, engineering and construction industry.
- Interdisciplinary research efforts that combine expertise from various fields and disciplines are necessary to tackle the complex societal problems.

Data Snapshot

Energy-Efficient Retrofitting Strategies for Research Laboratory Buildings: Case Study at the University of Utah, *ENQ (Enquiry), Journal of the Architectural Research Centers Consortium (ARCC)*, Vol. 22, No. 2, pp. 138-162, Aksamija, A., Milosevic, S., and Adekunle, T. <https://doi.org/10.17831/enqarcc.v22i2.1306>

This research project investigates energy-efficiency retrofit strategies of existing research laboratory buildings, including building systems, facades, and indoor environmental quality.

Up Next

"We are currently developing tools for facade performance predictions that integrate simulations with machine learning and optimization methods. More information about the ongoing research activities can be found here: <https://tp3c.utah.edu/>"