Utilizing Phase Change Materials in Data Center Cooling

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While data consumption is on the rise, data centers continue to be of paramount importance. These power-consuming giants produce exorbitant amounts of heat, and while traditional air conditioners can keep the servers inside cool, the cooling systems require extreme amounts of energy because of their lack of efficiency. The goal of this investigation was to use phase change materials, also known as PCMs, to design and test a plausible alternative to traditional air conditioning systems in data centers. Additionally, the inclusion of a thermoelectric generator with the purpose of reprocessing waste heat to produce energy was explored.

Awards Won: