

COLLOQUIUM

Storage at the Threshold: Li-ion Batteries and Beyond

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The high energy density and low cost of lithium-ion batteries have created a revolution in personal electronics through laptops, tablets, smart phones and wearables, permanently changing the way we interact with people and information. We are at the threshold of similar transformations in transportation to electric cars and in the electricity grid to renewable generation, smart grids and distributed energy resources. Many aspects of these transformations require new levels of energy storage performance and cost that are beyond the reach of Li-ion batteries. Next generation beyond Li-ion batteries and their potential to meet these performance and cost thresholds will be analyzed.

George Crabtree, Elizabeth Kocs and Lynn Trahey, The energy-storage frontier: Lithium-ion batteries and beyond, MRS Bulletin 40, 1067 (2015)