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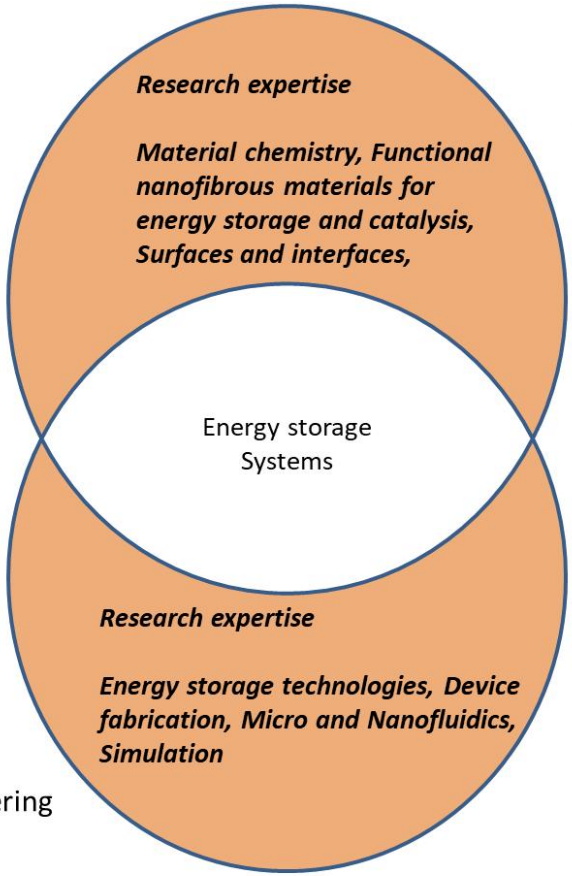

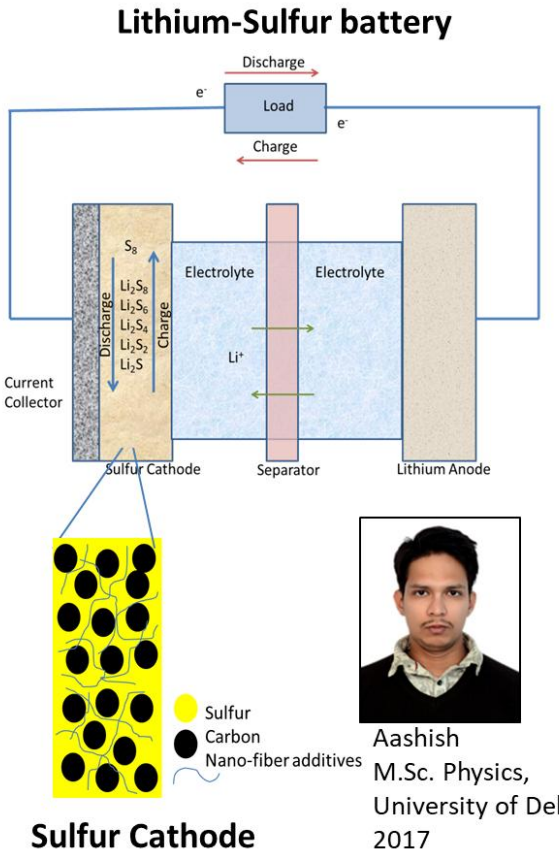

Sulfur Cathode

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Lithium-Sulfur batteries emerge as the next generation batteries with a theoretical capacity of 1675 mAh g^{-1} and an energy density of 2500 Wh Kg^{-1}. However, these batteries are incapable of maintaining their superior capacity after few cycles as the active species in the cathode forms polysulfides during subsequent cycling that are soluble in most of the organic electrolytes and causes the so called “Shuttle effect”. For years, researchers have been trying to trap these polysulfides within the vicinity of the cathode by adopting various materials and methods. But these lead to other complications such as increase in dead weight or increasing the overall cost of the battery. Textile based fibers prove to be an efficient class of materials that are light weight, economical and naturally abundant, which could be used as functional materials in Lithium sulfur batteries to trap the polysulfides.