

# Nagase Chemtex Paves Way For Higher-Capacity Lithium Batteries (Li-Sulfur)

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Nagase Chemtex Corp. has developed a promising new cathode material for a lithium sulfur battery that would have more than five times the charge-storage capacity of today's lithium-ion batteries.

Sulfur on its own has more than 10 times the charge-storage capacity of the lithium-cobalt-oxide materials now used as cathodes in lithium-ion batteries. But because electrons and ions move poorly through sulfur, the material is difficult to use for this purpose.

Nagase Chemtex improved the electron and ion mobility by mixing sulfur with two auxiliary materials. The Nagase & Co. (8012) group firm modified the granular sizes and structures of these materials to boost the sulfur content to 50%, yielding a cathode material that would give the battery around five times more charge-storage capacity than is possible with lithium-cobalt-oxide.

Sulfur is used in many industrial applications and is cheap to procure. If the price for the two auxiliary materials can be brought down through mass production, the overall cost of the new cathode material is estimated to come to around a third that of today's lithium-cobalt-oxide materials.

The company envisions the cathode being used in a lithium-sulfur battery along with metal lithium for the anode and a solid material for the electrolyte. It plans to continue with research and development of anode and electrolyte materials with the goal of entering the battery materials business after five years.

*SOURCE NIKKEI*