

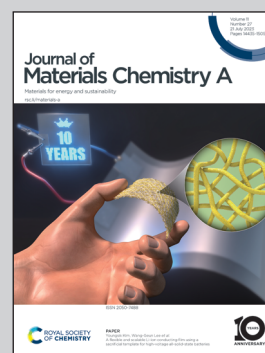


Showcasing research performed by a group of researchers comprising Prof. Dong-Wan Kim's laboratory from Korea University and Dr. Jin Gu Kang's laboratory from Korea Institute of Science and Technology.

Rational design of one-pot solvent-assisted synthesis for multi-functional Sn-substituted superionic Li argyrodite solid electrolytes

The rational design of a one-pot solvent-assisted route for simple, facile, and low-cost synthesis of the Sn-substituted Li argyrodite superionic conductors is demonstrated. Our method enables successful incorporation of Sn into host lattices, yielding highly crystalline materials with high ionic conductivity ($\sim 2 \text{ mS cm}^{-1}$), good air stability, and excellent Li compatibility. At 0.1C, the full cell exhibits an initial capacity of 151 mA h g^{-1} and $\sim 66\%$ capacity retention after 50 cycles (99 mA h g^{-1}). This work presents an unprecedented solvent-engineered approach for the fabrication of versatile Li argyrodites.

As featured in:



See Jin Gu Kang,
Dong-Wan Kim *et al.*,
J. Mater. Chem. A, 2023, **11**, 14690.