

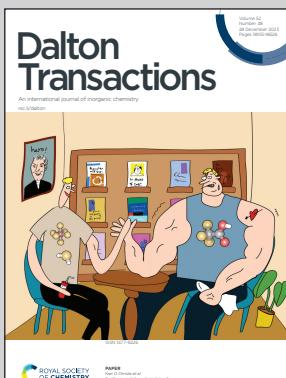
Showcasing research from Professor Shimojima's laboratory, Waseda University, Japan and Professor Yamazoe's laboratory, Tokyo Metropolitan University, Japan.

Immobilization of isolated dimethyltin species on crystalline silicates through surface modification of layered octosilicate

Precise control of the local environment and distribution of isolated metal species on silica surfaces is crucial, especially for catalytic applications. In this study, controlled grafting of Sn species was achieved through the reaction of dimethyltin dichloride with the SiOH/SiO<sup>-</sup> groups of crystalline layered octosilicate. Solid-state NMR and X-ray absorption fine structure (XAFS) analyses revealed the bidentate immobilization of the four-coordinated dimethyltin species via the Si-O-Sn bonds. The potential of layered silicates for developing single metal catalysts with a high density of isolated and well-defined active sites is demonstrated.

Artwork by Masashi Yatomi.

## As featured in:



See Atsushi Shimojima *et al.*,  
*Dalton Trans.*, 2023, **52**, 18158.