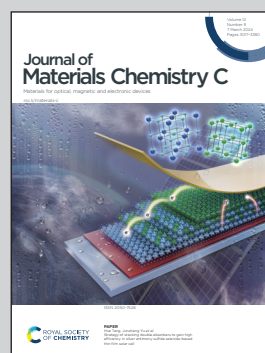


Depicting research from the Institute of Chemical Research at Kyoto University with international collaboration of Japan, UK, Australia, India, and USA.

Characterisation of  $\text{Pb}_2\text{Rh}_2\text{O}_7$  and  $\text{Y}_2\text{Rh}_2\text{O}_7$ : an unusual case of pyrochlore stabilisation under high pressure, high temperature synthesis conditions

Using high pressure, high temperature synthesis techniques, portrayed here in our “Crystal Workspace” art, we have discovered two new  $\text{Rh}^{4+}$  pyrochlores and a novel, layered 5-coordinate Rh oxide  $\text{PbRhO}_3$ . The stabilisation of  $\text{Y}_2\text{Rh}_2\text{O}_7$  is highly unusual, as pressures of 8 GPa act to stabilise a lower density structure compared to the ambient  $\text{YRhO}_3$  perovskite phase.

As featured in:



See Yuichi Shimakawa *et al.*,  
*J. Mater. Chem. C*, 2024, **12**, 3077.