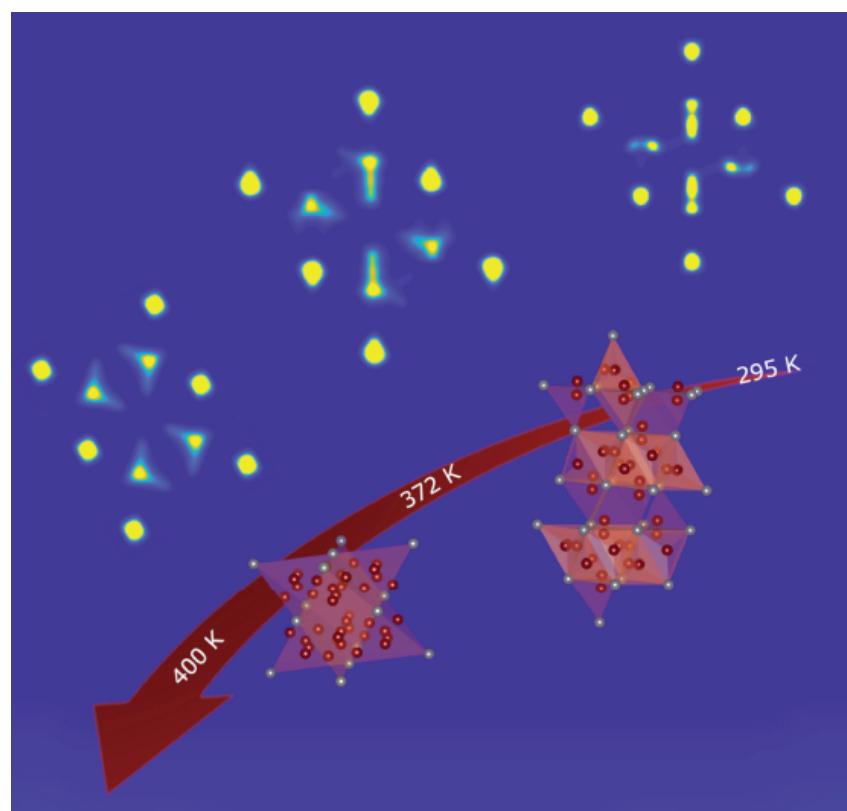


# Bo Brummerstedt Iversen

## Layered Thermoelectric Materials

Layered (2D) materials exhibit a variety of extraordinary properties, and recent focus has included topological insulators, electrode materials, monolayers, heterostructures – and thermoelectrics. The physical properties, such as band gap or thermal and electrical conductivity, are related to the detailed structural characteristics as well as the specific chemical bonding both within the covalent layers and across the van der Waal gap. It is generally assumed that layered materials exhibit anisotropic properties, but the properties are rarely discussed in direct relation to the specific chemical bonding characteristics of the solid. Using advanced crystallographic analysis including charge density modelling, as well as *ab initio* theoretical calculations, we have studied the crystal structures, chemical bonding, and physical properties of a range of important layered thermoelectric materials including  $\text{Cu}_2\text{Se}$ ,  $\text{Mg}_3\text{Sb}_2$ ,  $\text{SnS}_2$ ,  $\text{TiS}_2$ , and  $\text{SnSe}$ .



**Bo Brummerstedt Iversen** is a professor of chemistry at Aarhus University (AU). He is the Director of the Danish National Research Foundation Center for Materials Crystallography, the AU Center for Integrated Materials Research (iMAT), and from 2019, Director of the First Danish National Lighthouse on neutron and x-ray research. He obtained his Ph.D. degree from AU in 1995. Following a postdoc period at University of California, Santa Barbara, he returned to AU in 1998 and eventually became Full Professor and Chair of Inorganic Chemistry in 2004. He is one of the few Danish scientists holding both a Doctor of Science degree (AU, 2002) and a Doctor of Technology degree (DTU, 2010). He is a Fellow of the Royal Danish Academy of Science. Awards include the Queen Margrethe II Science Prize, the Danish Elite Researcher Award, the Grundfos Prize, and the AU Science Prize. He was Knighted by Queen Margrethe II in 2015. Prof. Iversen has been the responsible supervisor for 47 postdocs, 41 Ph.D. degrees, 71 Masters degrees, and 72 Bachelor degrees. He has published ~450 peer reviewed papers.

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