

Name	Hideo Hosono
Organization	Tokyo Institute of Technology
Division/Department	Frontier Research Center & Materials and Structures Laboratory
Title	Professor

Presentation Title

**New functionalities in abundant element oxides:
ubiquitous element strategy**

Abstract

While most ceramics are composed of ubiquitous elements (the ten most abundant elements within the Earth's crust), many advanced materials are based on rare elements. A 'rare-element crisis' is approaching owing to the imbalance between the limited supply of rare elements and the increasing demand. Therefore, we propose a 'ubiquitous element strategy' for materials research, which aims to apply abundant elements in a variety of innovative applications. Creation of innovative oxide materials and devices based on conventional ceramics is one specific challenge. This review describes the concept of ubiquitous element strategy and gives some highlights of our recent research on the synthesis of electronic, thermionic and structural materials using ubiquitous elements.