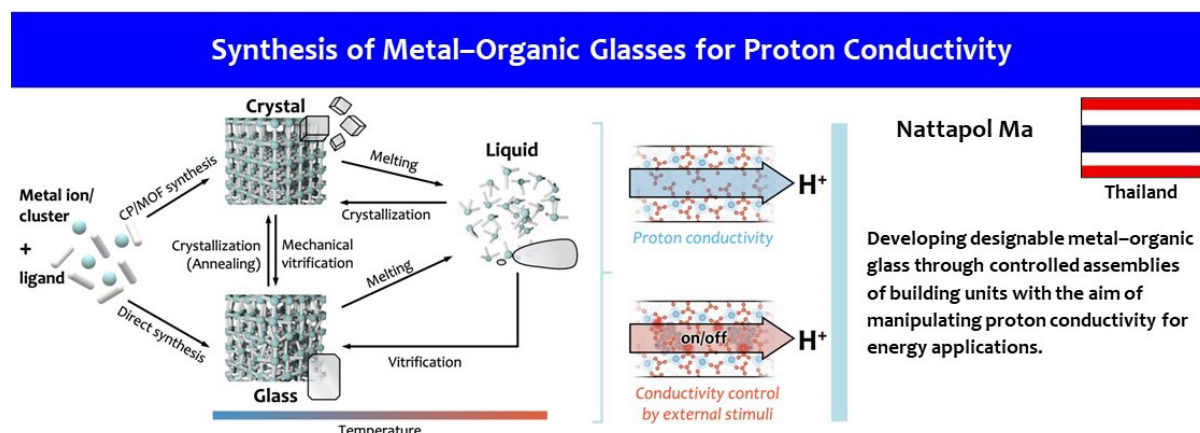


<Research Topics>

Synthesis of Metal-Organic Glasses for Proton Conductivity

ICYS Research Fellow Dr. Nattapol MA



■ Research

My research is driven by the desire to accomplish generalized methodologies for crafting amorphous materials with customizable properties. I focus on the synthesis of new metal-organic glass constructed of metal ions and organic molecules and explore strategies to control their properties, especially proton conductivity. The aim is to achieve desirable properties by integrating the advantages of the systematic design concept found in coordination polymer/metal-organic frameworks with the wide composition range of glass. For example, a relatively high proton conductivity and controllable thermal properties in metal-organic glasses are achievable by carefully selecting their components. A wide composition range allows for hybridizing the glasses with functional materials. This enables the formation of a binary glass system in which the properties of both individual components are complementary. Additionally, introducing stimuli-responsive molecules into the metal-organic glass matrix also enables remote property controls, such as an optical-switchable system.

■ Comments

I decided to join ICYS mainly because of the unique program structure. The program provides me the opportunity to independently initiate and oversee my research based on my personal interests, all while benefiting from invaluable support through mentoring systems. Advancing research for early-career researchers can often be challenging, particularly regarding access to advanced characterization equipment and research budgets. But as an ICYS researcher, I can take full advantage of the research facilities at NIMS and the annual research budget. This allows me to enjoy and focus on progressing with my research without concern. At ICYS, you are surrounded by talented ICYS researchers from diverse backgrounds. This opens up a new opportunity to exchange ideas and initiate collaboration at the interface between two or more research fields. Together, this is an ideal place to discover new sciences.

■ Link

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