Theme : 3D Battery

- Sub Theme : Oxide Type Solid Electrolyte prepared by CVD

Li ion batteries have been widely used as power sources for portable electric devices. Recently, all-solid-state Li ion batteries have attracted attention due to a replacement of a volatile and flammable organic liquid electrolyte with a non-flammable inorganic solid electrolyte. To improve energy density with this solid electrolyte, one of the concepts is 3D structured all-solid-state Li ion batteries, but forming a conformal 3D structured solid electrolyte is a very challenging technique.

We are aiming to find a new oxide-type solid electrolyte with high ionic conductivity and a thin film deposition technique to adopt on 3D structured oxide materials.

The topics we pursue through this GRO are as follows:

- Thin film oxide solid electrolyte with high ionic conductivity for Li ion batteries
- Conformal 3D deposition or coating technique of a few micrometer thick solid electrolyte on high aspect ratio(>10) oxide electrodes
- New liquid Li-precursors with high vapor pressure for chemical vapor deposition

※ The topics are not limited to the above examples and the participants are encouraged to propose original idea.

※ Funding : Up to USD $200,000 per year