

Preliminary Studies on Electrodes for Rechargeable Lithium-ion Batteries
by 3D Printing Technology

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With the 4th industrial revolution progresses, various types of electric devices have been highly demanded and they have been required to operate the electric devices with suitable energy systems. Batteries have been dominantly using as energy devices but they still limited to support the various types of things.

The 3D printing technology have been applied for lithium-ion batteries (LIBs) because various shapes of electrodes could be easily prepared comparing with conventional laminating technology. However, it is necessary to resolve problems like state of materials, binders, and viscosity of electrode materials in order to fabricate electrodes using 3D printing technology.

In this study, we have tried to find the suitable electrode materials for 3D printing technology. In addition, to investigate the crystallinity and morphology of the prepared electrodes, X-ray diffraction (XRD) and field emission scanning electron microscopy (FE-SEM) have been characterized and also the electrochemical properties of the 3D printing electrodes have been compared with those by the conventional laminating electrodes.