

Microcrystal growth of organic conductors in nanoliter cell

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Crystal growth of micro-size organic conductors in home-build nanoliter cell is carefully investigated by optical microscope especially of crystal shape and crystallization site with additional growth parameters.

Nano-volume glass cell with micro-size electrodes was fabricated from conventional glass slides. This home-build cell allows us to control the electrochemical growth of organic conductors because of its restricted growth volume and observable growth space. By employing this nanovolume cell, we achieved rapid growth, such as in seconds [1].

To obtain more control on crystal growth, we applied additional AC voltage across extra electrodes or mechanical vibrations on the growth cell during the crystal growth. To our surprise, we observed interesting phenomena particularly about crystal shape upon these additional parameters. Moreover, the crystal shape change took place after the parameters were removed. We will report the phenomena and discuss the influence of AC voltage or mechanical vibrations on crystal growth in terms of ionic behavior near the electrode surface.

[1] K. Kobayashi *et al.*, *Appl. Phys. Lett.*, **93**, 143114 (2008).