

Design and application of organic/inorganic electrospun fibers

Takashi Sagawa

Graduate School of Energy Science, Kyoto University, Kyoto 606-8501, Japan

sagawa@energy.kyoto-u.ac.jp

Electrospinning has attracted much attention for preparation of various kinds of functional fibers made of polymers, metals, and their composites of organic and/or inorganic materials. Not only the combinations of the materials, but spinning processes have also been developed in terms of the various conditions of electric field, magnetic field, humidity, temperature for dryness and calcination in some cases in addition to the improvement of spinning instruments such as nozzle, grid, collector, and so on. In this context, our materials design of organic/inorganic hybrid electrospun fibers made of conducting polymers, donors/acceptors, carbons, metals and metal oxides for solar cells, catalyst, and batteries [1, 2] are going to be reviewed and our recent progress on the preparation of core/shell and hollow fibers [3] will be introduced.

References

- [1] S. Chuangchote and T. Sagawa, Application of electrospun nanofibers in organic photovoltaics (Chapter 6), *Electrospun Nanofibers for Energy and Environmental Applications, Nanostructure Science and Technology Series*, ed. by B. Ding, J. Yu, Springer Verlag, Heidelberg, pp. 141-162 (2014).
- [2] L. Macaraig, S. Chuangchote, and T. Sagawa, *J. Mat. Res.* **2014**, 29, 123-130.
- [3] N. Kaerkitcha, S. Chuangchote, and T. Sagawa, *to be published*.