

Active Polymeric Fibers as Nanoreactors

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Abstract

In recent years there has been an ongoing endeavor to develop and construct nano- and microscale reactors, in which chemical reactions are performed in confined sub-microliter volumes. Such reactors have several important advantages over macroscale reactors including superb heat transfer and scale-independent synthesis. In addition, such reactors are a useful and flexible tool for examining the effect of sub-microliter confinement volumes on chemical reactions.

In this talk, I will discuss the potential of active microfibers as microreactors, and demonstrate the use of microfibers both as closed microreactors for obtaining freestanding metal-organic frameworks (MOFs) composite fabrics and as open microreactors for conducting catalytic processes in nanoliter environments.¹

References

- [1] Sitt, A.; Soukupova, J.; Miller, D.; Verdi, D.; Zboril, R.; Hess, H.; Lahann, J., *Small* 2016, 12, 1432– 1439.

Figures

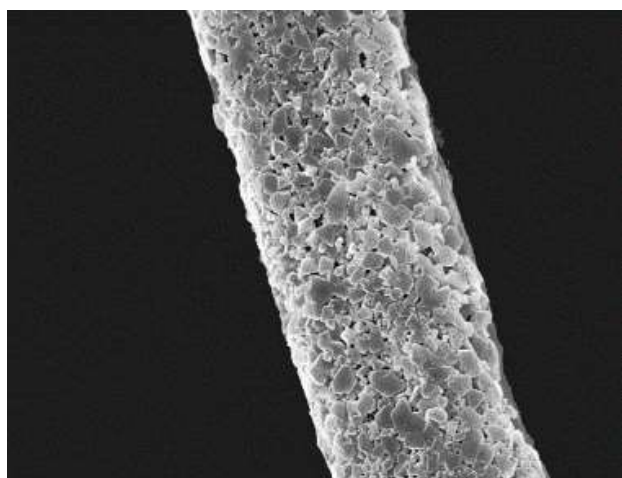


Figure 1. A polymer fiber acting as a reactor and a template for the synthesis of HKUST1 metal organic framework nanocrystals