

Abstract Submitted
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Fabrication of a Conjugated Polymer on Surfaces Studied by Electron Microscopy HIROSHI JINNAI, TAKESHI HIGUCHI, DAIKI MURAKAMI, JST ERATO Takahara Softinterfaces project/Kyushu Univ, MITSUO SUGA, JEOL Ltd., ATSUSHI TAKAHARA, JST ERATO Takahara Softinterfaces project/Kyushu Univ — A controlled “in-situ” nano-patterning is highly demanded in various fields of nano-technology. A nano-rod array oriented perpendicular to the substrate is one of the typical nano-structures useful in energy, biomimetic and memory applications. We here proposed a novel nano-patterning method to synthesize polymers by irradiation of electron beam into monomer liquid under atmospheric pressure and concurrently to pattern nano-rod array by scanning the beam. A polymer that can be synthesized by this method includes the poly(3-hexylthiophene), one of the most frequently used conjugated polymers in an organic photovoltaic device. The “Atmospheric Scanning Electron Microscope (ASEM),” which enables us to observe morphologies and dynamic phenomena in liquid under atmospheric pressure, was used for fabricating nano-rod structures in this study.

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