

Research on Functional Polymers: From As-desired Properties to As-designed Structure

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Abstract

Currently, carrying out research in academia society receives the expectation on not only for the fundamental knowledge to express the advances in scientific research output but also the practical applications to fulfil the technology transfer to the industries. For polymer research, it is an ideal to develop unique ideas with the basic understanding at molecular level and/or nano-micro packing structure at the first stage followed by the show-case of possible applications and/or innovation. On this viewpoint, the research on functional polymers which the chemical and/or physical modifications are the tools to develop the polymer matrices so that the materials obtained in macro-scale present additional properties. To my idea, the consideration starting from the as-desired properties is a good strategy to lead us to the concrete modifications. The presentations will show the research works under the concept of 'from as-desired properties to as-designed structure' through the examples of capturable-releasable chitosan, light responsive sheets, thermal responsive bioplastic films, and the high toughness polylactic acid-starch packaging films, etc.