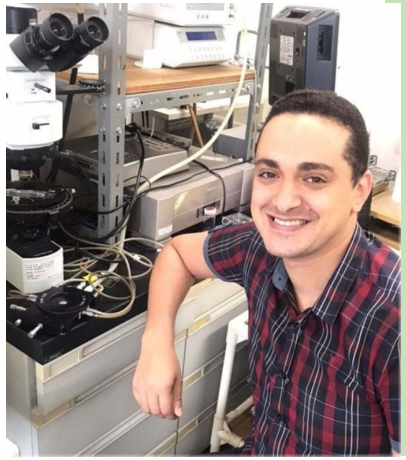
Formation, Structure, and Function of Polymer-Based Nanocomposites including Organo-modified Single-walled Carbon Nanotubes

Research introduction (2020.3.15-18)

Saitama University 埼玉大学



Bio data

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Keywords: Carbon nanotube, LB film, Surface-modification, Nanocomposite
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Why I select this program

I am interested in studying nanomaterials and thin films and applied for this program. I have been graduated from Chemistry Department, Faculty of Science, Tanta University, Egypt since 2010. In 2012, I have been finished my postgraduate studies in advanced courses in chemistry. Recently, I have been awarded my M.Sc. degree from the Faculty of Science, Tanta University, Egypt in June, 2016 entitled "The modification of some nanomaterials having potential applications in water quality upgrading". I am looking for continuing my studies in Saitama University.

Research summary

Crystalline polymer/single-walled carbon nanotube (SWCNT) nanocomposites were prepared using organo-modified SWCNTs with surface modification by long-chain phosphonic acid derivatives having bidentate bonds, resulting in excellent heat resistance properties. The utilization of phosphonic acid derivatives containing fluorocarbon chains endowed SWCNTs with remarkable cohesive properties in phase-separable crystalline fluoropolymers to achieve polymer-based nanocomposite formation.