Abstract

[Project Information]

Project Title :	Development of Near-Infrared Electrochromic Materials for Heat-Shield Control
Project Number :	JPMEERF20221M02
Project Period (FY) :	2022-2024
Principal Investigator :	Higuchi Masayoshi
(PI ORCID) :	ORCID0000-0001-9877-1134
Principal Institution :	National Institute for Materials Science Tsukuba City, Ibaraki, JAPAN Tel: +81298604744 E-mail: HIGUCHI.Masayoshi@nims.go.jp
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Keywords :	Heat-shield, Near-infrared, Electrochromic, Redox, Metallosupramolecular polymer

[Abstract]

Two themes were carried out: development of near-infrared electrochromic materials and devices, and development of an ultra-efficient synthesis method for near-infrared electrochromic materials. Overall, we succeeded in developing a metallo-supramolecular polymer that exhibits near-infrared EC properties, with a transmittance difference of more than 50% between the transmitting and blocking states in the near-infrared region. In sub-theme 1, we succeeded in developing a metallo-supramolecular polymer with a two-dimensional nanosheet structure that exhibits multi-color electrochromic properties by precisely introducing two types of metal species. In sub-theme 2, we developed a new method for synthesizing metallo-supramolecular polymers in a short time by using microwaves.

[References]

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