

Metal—organic framework thin films composed of free-standing acicular nanorods exhibiting reversible electrochromism.

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Streszczenie

A uniform and crack-free metal—organic framework (MOF) thin film composed of free-standing acicular nanorods was grown on a transparent conducting glass substrate. The MOF thin film exhibits electrochromic switching between yellow and deep blue by means of a one-electron redox reaction at its pyrene-based linkers. The rigid MOF stabilizes the radical cations of the pyrene linkers at positive applied potential, resulting in the reversible color change of the MOF film. The regular and uniform channels of the MOF allow ions to migrate through the entire film. The MOF thin film thus exhibits a remarkable color change and rapid switching rate.

Słowa kluczowe

electrochromism, metal organic frameworks, one-dimensional nanorods, pyrene

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