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RECENT PROGRESS IN THE CHEMISTRY OF ORGANIC FUNCTIONAL RADICALS

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Abstract

Organic free radicals derived from small molecules as oxygen or nitric oxide play important rolls on environmental or biological issues. On the other hand, stable radicals especially nitroxide radicals, based on somewhat larger molecular units are frequently used as spin probes or spin labeling reagents mainly in biological studies and are applied nowadays for organic magnetic material as well. There is a trend in the field of organic magnetic materials to develop multi-functional organic radicals such as organic photochromic, thermochromic, liquid crystalline, or conducting radicals, and organic radical batteries. During the course of our studies toward organic magnetic materials based on nitroxide radicals, we have been interested in developing organic functional radicals with multi-properties and some of recent results toward the development of novel functional radicals with thermochromic, photochromic, or secondary battery properties have been described by illustrating three representatives.

Key words: nitroxide, organic radical, photochromism, secondary battery, thermochromism

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