

～光／熱で完全制御が可能な分子スイッチの創出に成功！～

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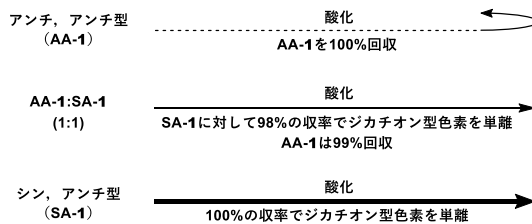
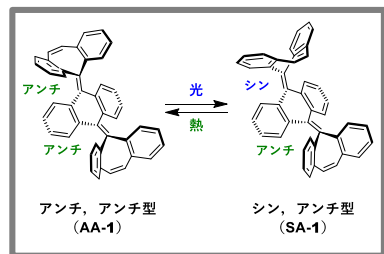
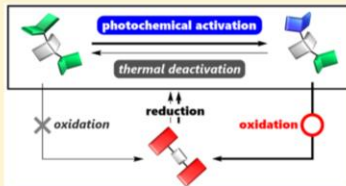
Photo- and Thermal Interconversion of Multiconfigurational Strained Hydrocarbons Exhibiting Completely Switchable Oxidation to Stable Dicationic Dyes

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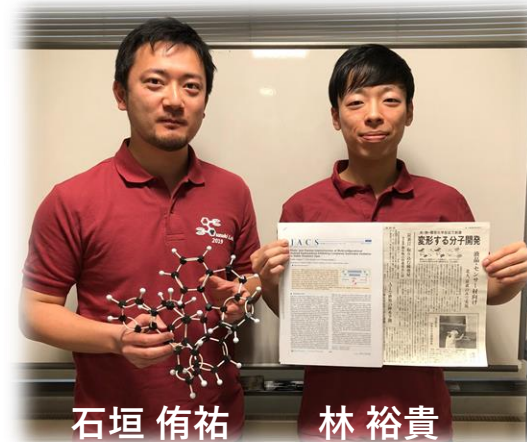
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Supporting Information

ABSTRACT: Highly strained hydrocarbons with two di/tribenzocycloheptatriene units were designed as electrochromic overcrowded ethylenes that undergo reversible interconversion with stable dicationic dyes. Due to severe steric repulsion, two configurational isomers (*anti,anti*-folded and *syn,anti*-folded forms) were isolated as stable entities. Photo- and thermal interconversion of these isomers proceeded cleanly: one-way photoisomerization occurred from *anti,anti*- to *syn,anti*-form and one-way thermal isomerization was observed from *syn,anti*- to *anti,anti*-form. Even though both isomers undergo two-electron oxidation into the same twisted dications, quite different oxidation potentials enable completely selective oxidation of *syn,anti*-isomers. Thus, the present multiconfigurational strained hydrocarbons are capable of switching of activation/deactivation of their electrochromic properties by light/heat.



- ・ 光／熱により可逆な構造変化を実現し、酸化特性のON/OFF制御に初めて成功！
- ・ 二つの異性体が混合した状態であっても、一方の異性体を選択的に酸化可能！
- ・ 市販の化合物からわずか三工程で合成可能！
→ 新たな材料開発の進展が期待される！！



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変形する分子開発として注目を集め、日刊工業新聞やオンラインニュースなどで取り上げられている！！



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