分類E　多元研 IMRAM *　IF=Not yet

材料化学の新しいフロンティアに向けたダイナミックな分子集合体

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新しい論文誌でIFが決まっていないが、RSC系の論文誌であり、高いIFが期待される

Dynamic Molecular Assemblies Toward a New Frontier in Materials Chemistry

Tomoyuki Akutagawa

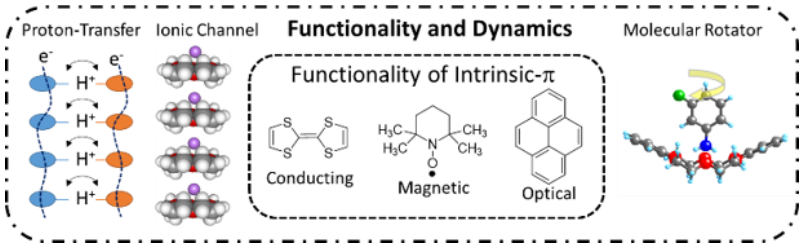


Figure 1. Molecular assemblies including intrinsic-π functions such as electrical conducting, magnetic, and optical properties coupled with the dynamic functions of proton transfer, ion channel, and molecular motion.

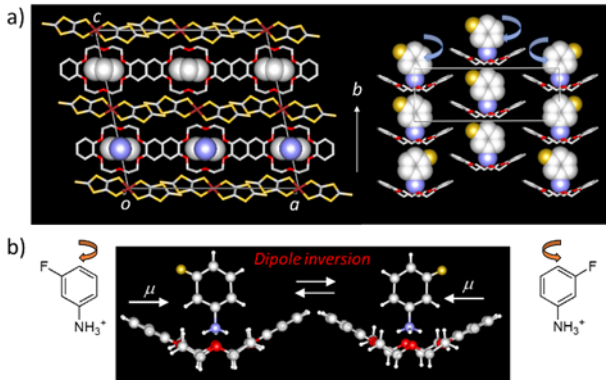
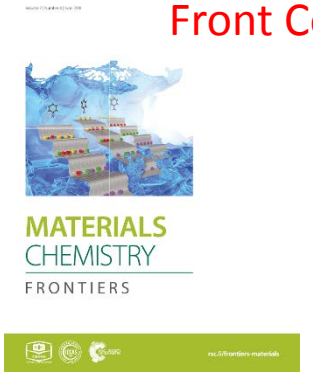


Figure 2. Two-fold flip-flop motion of *m*-FAni$^+$ cations along the C-NH_3^+ axis in monovalent [Ni(dmit)$_2$] crystals. a) Unit cell and supramolecular rotator layer in *m*-FAni$^+$(dibenzo[18]crown-6)[Ni(dmit)$_2$] crystals. b) The motional freedom of polar *m*-FAni$^+$ cations is sensitive to the dielectric response and resulted in the phase transition from the low temperature ferroelectric to the high temperature paraelectric states.

Front Cover



Supramolecular approaches using directional hydrogen-bonding, halogen bonding, π-stacking, host–guest, and hydrophobic interactions have been effectively used to achieve lattice dynamics including proton transfer, ionic transport, and molecular rotations in the closest-packing molecular assemblies. Such approaches enable the formation of dynamic multi-functional intrinsic π-electronic materials with electrical conductivity, magnetism, and unique optical responses.
方向性のある水素結合、ハロゲン結合、πスタック、ホストーゲスト、疎水性相互作用を使った超分子化学のアプローチは、結晶中のプロトン移動、イオン輸送、分子回転などの格子ダイナミクスの実現に利用されている。これは、電気伝導性、磁性や光学特性を示すπ電子系材料の多重機能化を可能とする。