

2電子還元型ポリオキソメタレートの誘電異常

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A dielectric anomaly observed for doubly reduced mixed-valence polyoxometalate

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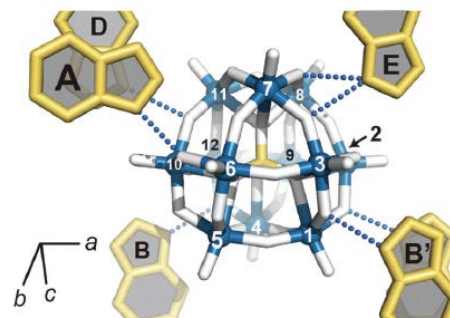


Figure 1. Crystal structures and intermolecular interactions.

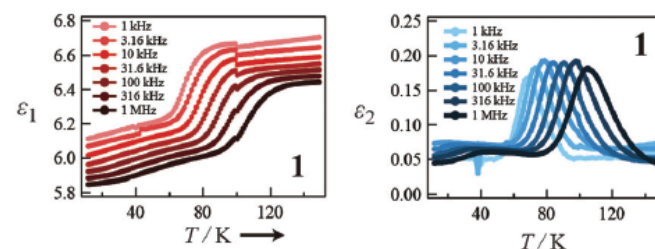
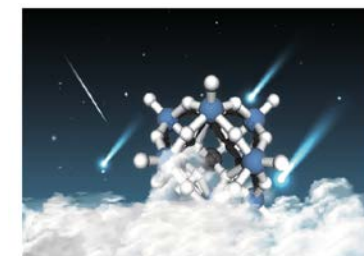


Figure 2. Temperature dependence of real ϵ_1 of the complex dielectric constant for **1** and **2**.



Showing research from Ryo Tsunashima's laboratory, Graduate School of Science and Engineering, Yamaguchi University, Japan.

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Quasi-isomorphous crystals of mixed-valence molecular metal oxides that consist of $[\text{PMoV}_2\text{Mo}^{\text{VI}}_{10}\text{O}_{40}]_5$ and fully oxidized $[\text{BW}^{\text{VI}}_{12}\text{O}_{40}]_5$ with reduced dielectric structure and dielectric behavior were discussed from a new of dielectric discussion.



As featured in:
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See Ryo Tsunashima et al.
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Inside cover article & Highlight

ベンゾイミダゾリウムカチオンを対イオンとする同型結晶を有する混合原子価ポリオキソメタレート塩 $[\text{PMoV}_2\text{Mo}^{\text{VI}}_{10}\text{O}_{40}]_5$ (**1**) と二電子還元型塩 $[\text{BW}^{\text{VI}}_{12}\text{O}_{40}]_5$ (**2**) を作製し、その結晶構造と誘電物性に関する検討を行った。結晶構造の比較から、塩**1**の誘電異常の出現は、混合原子価状態における電子双極子の揺らぎに依存すると結論した。

Benzimidazolium is revealed to form quasi-isomorphous crystals of mixed-valence molecular metal oxides that consist of $[\text{PMoV}_2\text{Mo}^{\text{VI}}_{10}\text{O}_{40}]_5$ and fully oxidized $[\text{BW}^{\text{VI}}_{12}\text{O}_{40}]_5$. The structure and dielectric behavior were compared and a dielectric anomaly was evident due to the electric dipole relaxation in the mixed-valence system.