

分岐アルキル側鎖を導入した棒状金錯体の液晶性と発光挙動

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Liquid Crystal and Luminescence Behavior of Rod-like Gold(I) Complex with Branched Alkyl Side Chains (*College of Life Sciences, Ritsumeikan University*) ○Renzaburo Otani, Kohsuke Matsumoto, Osamu Tsutsumi

Luminescent materials with aggregation-induced emission (AIE) properties have garnered significant interest for their potential applications in luminescent technologies. Our focus lies in exploring gold complexes as AIE materials, as they are known to exhibit robust luminescence in aggregated phases, driven by aurophilic interactions between gold atoms. Our recent investigations revealed that the manipulation of the aggregated structure of rod-like gold complexes can be achieved by introducing liquid crystallinity, thereby influencing their luminescence behavior. In this study, we present the synthesis of a novel rod-like gold complex featuring branched alkyl side chains. Our investigation delves into elucidating the liquid crystalline properties of the gold complex and comprehensively characterizing its luminescence behavior. The results obtained contribute to a deeper understanding of the interplay between liquid crystal morphology and luminescence in gold complexes, paving the way for potential advancements in the design and application of AIE materials.

Keywords : Gold Complex, Aurophilic Interaction, Liquid Crystal

凝集状態で発光強度が増強する材料は発光デバイスなどへの応用が期待できる。われわれはこのような材料として金錯体に着目した。金錯体は金原子間に発現する親金相互作用に基づき、凝集状態で高効率な発光を示す。また、その発光挙動は錯体の凝集構造に依存して変化する。これまでにわれわれは、イソシアニドを配位子とする棒状金錯体に液晶性を付与することで凝集構造を変化させ、発光挙動を制御することに成功している¹⁾。本研究では、分岐アルキル側鎖を導入した棒状金錯体を新たに合成した (Figure 1)。得られた金錯体における液晶性や発光挙動について検討したので報告する。

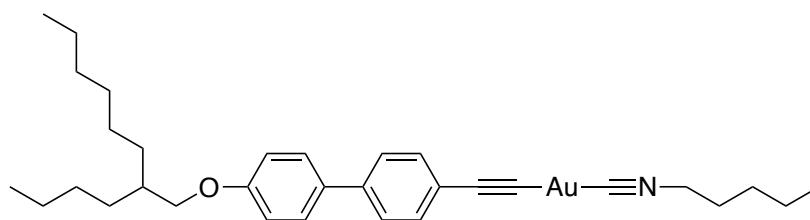


Figure 1. Molecular structure of gold complex used in this study.

1) Fujisawa, K; Tsutsumi, O. *et al. J. Mater. Chem. C*. **2014**, 2, 3549–3555.