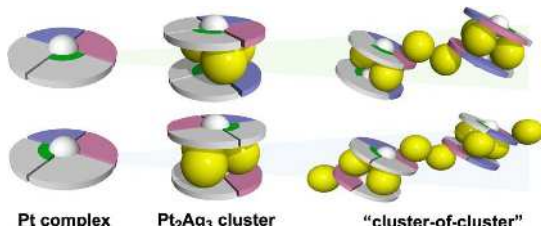
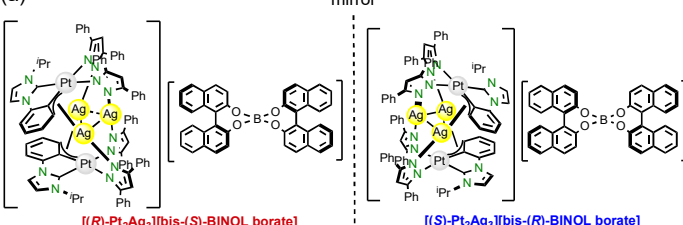
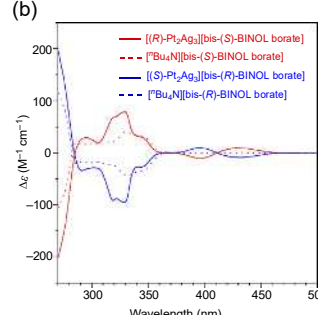
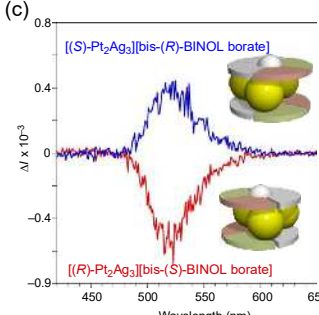


Name UMAKOSHI Keisuke	Job Title Professor	Area of Expertise Coordination Chemistry
1. Main Research Topics Our group synthesizes platinum complexes and strongly luminescent mixed metal complexes composed of platinum and group 11 elements. We are developing photofunctional metal complexes for use as luminescent materials and photocatalysts, such as for use as light-emitting materials and for sensing functions using changes in luminescent properties such as vapochromism and mechanochromism. The introduction of chirality into strongly luminescent complexes is also expected to be applied to circularly polarized luminescent materials. ① Development of a method for sequential synthesis of heterometallic complexes  Pt complex Pt₂Ag₃ cluster "cluster-of-cluster" By using asymmetric platinum complex units and reacting them with silver ions in a stepwise manner, we have succeeded in controlling and observing the hierarchical self-assembly process from the molecular level in a stepwise manner. The aggregation structure changes drastically by replacing just one atom in the asymmetric platinum complex unit. ② Development of strongly luminescent chiral complexes (a)  [(R)-Pt₂Ag₃][bis-(S)-BINOL borate] [(S)-Pt₂Ag₃][bis-(R)-BINOL borate] (b)  (c) 		
2. Keywords Luminescence, Mixed metal complexes, Platinum complexes, Chiral complexes, Circularly polarized luminescence, Sequential synthesis of heterometallic complexes		
3. Remarks and Websites We have synthesized various platinum complexes and mixed metal complexes that emit strong blue to green light. These complexes have the potential to be used as luminescent materials for OLED displays. In addition, the use of chiral ligands for strongly emissive metal complexes may enable their use as materials for circularly polarized luminescence. Chiral metal complexes can also be synthesized by making the coordination environment around the metal center without using chiral ligands. Recently, we have been focusing on the development of circularly polarized luminescent materials. Our technology is expected to be applied to 3D displays using circularly polarized light-emitting material researchmap: https://researchmap.jp/read0167150 Laboratory: http://www.cms.nagasaki-u.ac.jp/lab/sakutai/		