

Luminescent Heteropolynuclear Complexes of 3,5-Dimethylpyrazolate [Pt₂Au₂M₂(Me₂pz)₈] (M = Ag, Cu) Showing Synergetic Effect of Three Transition Elements in the Excited State

Keisuke Umakoshi,^{†,*} Keizo Saito,[†] Yasuhiro Arikawa,[†] Masayoshi Onishi,[†] Shoji Ishizaka,[‡] Noboru Kitamura,[‡] Yoshihide Nakao,[§] and Shigeyoshi Sakaki[§]

[†]Department of Applied Chemistry, Faculty of Engineering, Nagasaki University, Bunkyo-machi, Nagasaki 852-8521, Japan, [‡]Division of Chemistry, Graduate School of Science, Hokkaido University, Kita-ku, Sapporo 060-0810, Japan, [§]Department of Molecular Engineering, Graduate School of Engineering, Kyoto University, Nishikyo-ku, Kyoto 615-8510, Japan

*Tel/Fax: +81-95-819-2672, E-mail: kumks@nagasaki-u.ac.jp

Heteropolynuclear transition metal complexes have been attracting much attention, because they are expected to exhibit specific interactions and cooperative effects between the transition elements, which provide novel functions that are unobtainable through the individual elements. One of the best probes to investigate the metal-metal interactions is luminescence, because it is very sensitive to the change of the energies of ground and excited states. Much effort has been devoted to the study on the photophysical properties of heteropolynuclear complexes, though these studies are limited to the complexes composed of two transition elements and ligands. It is thus very interesting to study the photophysical properties arising from the metal-metal interactions among three transition elements. Here, we wish to report the synthesis of luminescent heteropolynuclear complexes containing three transition elements, [Pt₂Au₂M₂(μ-Me₂pz)₈] (M = Cu (3), Ag (4)), which exhibit synergetic effect of the three transition elements.

