

Séminaire PPSM

Vendredi 21 Septembre 2012 - 10h00

Auditorium D. Chemla - Bâtiment IDA

Professeur Osamu TSUTSUMI

College of Life Sciences, Ritsumeikan University, Kyoto, Japon

Invité par : Valérie Alain

«Tunable Full-Color Luminescence from Liquid-Crystalline Gold Complexes»

Gold(I) complexes show strong luminescence via Au(I)–Au(I) interaction (aurophilic interaction). Their quantum yields of photoluminescence, therefore, are enhanced in the condensed phases, and one can expect the gold complexes are possible candidate for materials for light-emitting devices. It has been reported that luminescent properties of those complexes depend on the aggregation structure, thus the aggregation structure of the complexes should be controlled to be suitable for luminescence. In order to control the aggregation structure, we designed and synthesized liquid-crystalline (LC) gold(I) complexes with disc-like or rod-like molecular shape. All complexes show strong photoluminescence both in crystalline and LC phases, but no luminescence was observed in dilute solutions. We found that extremely large changes in the luminescent color were induced by phase transition. For example, a disc-like LC gold complex showed blue-yellow-red tricolor luminescence from a single material (Fig. 1). In addition, in a rod-like LC gold complex, we observed white-color luminescence emitted from a single material.

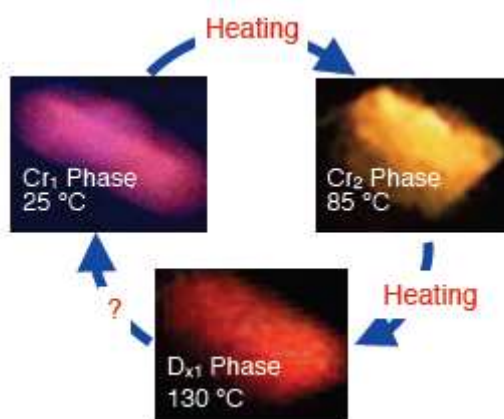


Fig. 1 Photoluminescence from a liquid-crystalline gold complex. The luminescent color was controlled by the aggregation structure of the gold complex.

PPSM

ENS Cachan – 61 avenue du Président Wilson
94235 Cachan Cedex – France

Tél : +33 1 47 40 53 38 – Fax : +33 1 47 40 24 54

e-mail : ahusson@ppsm.ens-cachan.fr

site web : <http://www.ppsm.ens-cachan.fr>