

Research Grants for PhD students from the China Scholarship Council

Information Form (please read the guidelines carefully on the website www-csc.utt.fr)

Supervisor's name : Given names :

Status (prof., assistant prof., ...) :

Laboratory : \"Institut des Sciences Chimiques de Rennes\""/> Website address :

Institution : Website address :

Scientific competence of the supervisor:

Christophe Lescop is graduated from the Ecole Nationale Supérieure de Chimie de Paris in Inorganic Chemistry and has a PhD in Molecular Magnetism of the University of Grenoble I. His main research interests are the use of coordination and supramolecular chemistry in order to set up straightforward and general routes to new, cheap and smart multifunctional molecular materials for optoelectronic applications. Main characterisation techniques mastered are multinuclear NMR spectroscopies, X-ray crystallography and state of art luminescence studies,

Two major publications in the field proposed for the PhD :

1.
2.

Website address of the personal page :

Supervisor's email :

Description of the research work proposed for a PhD **Topic # (see list) :**

Title :

Subject :

An increasing interest is devoted to Cu(I) metal complexes in order to design brightly emissive cheap materials for low-energy consuming and large scale lighting applications and for multifunctional materials. To date, the structural variety of these metal complexes is mostly limited to Cu(I)X halide fragments (X = Cl, Br, I) stabilized by bulky phosphine ligands. Multi-step syntheses are often needed to design such ligands that, in-fine, give access to a limited number of possibility of structural variation and photophysical properties modulations in the resulting complexes. The goal of this PhD work will be to develop coordination driven supramolecular synthetic routes (mastered in our group) using supramolecular association processes to obtain a large variety of solid state emitting Cu(I) multimetallic assemblies obtained along one-step self-assembling reactions from cheap and readily available molecular precursors. Thanks to this very versatile approach for which very promising preliminary results have been achieved, molecular structure will be very easily and highly modulated from the same molecular clip thank to the use of various connecting organic or inorganic ligands. This will afford a number of new multifunctional molecular materials having various photophysical properties. The PhD student will perform the syntheses of these derivatives, the solid state characterisation and study their multifunctional emission properties.

Keywords :

Expected collaborations :

Background required from the applicant :

Existence of a PDF file detailing the proposal ("yes" or "no") :

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