

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 : Calvez Given names : Guillaume

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

Laboratory : Institut Sciences Chimiques Rennes – UMR
CNRS 6226 Website address : <https://iscr.univ-rennes1.fr>

Institution : Institut National des Sciences Appliquées de
Rennes Website address : <https://www.insa-rennes.fr>

Scientific competence of the supervisor:

coordination chemistry – luminescence

Two major publications in the field proposed for the PhD :

1. H. Yao et al., Inorg. Chem., 2019, 58, 16180-16193

2. G. Calvez et al., Coord. Chem. Rev., 2017, 340, 134-153

Website address of the personal page : <https://iscr-csm.insa-rennes.fr/guillaumecalvez/>

Supervisor's email : Guillaume.Calvez@insa-rennes.fr

Description of the research work proposed for a PhD **Topic # (see list) :** IV-5

Title : New coordination compounds based on hexanuclear molecular precursors

Subject :

The goal of this research work would be to synthesize and characterize new coordination compounds using hexanuclear molecular precursors as secondary building units. The precursors are now well known and their synthesis is mastered by the group, but their use as precursors for further synthesis must be developed. Indeed some complexes, coordination polymers or nanoagregates based on these polymetallic complexes have been reported. However, the synthetic process is to date misunderstood and deserves further studies. In the frame of this study the characterizations of the new compounds will be multiple, their thermal and chemical stability and their photo-physical properties in particular will be studied.

Keywords :

coordination chemistry, polynuclear complexes, luminescence

Expected collaborations :

The other member of the group of course for magnetic, structural, time-resolved luminescence studies for example. NMR studies will be performed via an existing collaboration with Dr L. Le Pollès at ENSCR. Any other collaboration that would offer a better insight in the sometimes tough to characterized objects will be welcome.

Background required from the applicant :

Basics of chemistry techniques but also basic knowledge on previously cited characterization techniques would be welcome, together with a willing to learn english and french.

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

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