

Fluorescent materials based on fluorescein platform (FluoMat)

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Project team:

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Abstract:

The current project is devoted to the design, synthesis, and characterization of novel fluorescent materials based on fluorescein platform. Three types of materials are targeted:

- i) discrete coordination compounds containing 3d or/and 4f metal ions and functionalized fluorescein based ligands;
- ii) coordination polymers containing 3d or/and 4f metal ions and fluorescein derivatives;
- iii) hybrid organic solids constructed from functionalized fluorescein derivatives and other organic species through specific supramolecular interactions.

Objectives:

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- Design and synthesis of functionalized fluorescein based ligands able to coordinate specifically to 3d and/or 4f metal ions; structural characterization of these ligands; investigation of the luminescent properties of the ligands; exploration of the sensing abilities of the functionalized fluorescein based ligands towards various metal ions.
- Synthesis and structural characterization of mono- and binuclear complexes of the functionalized fluorescein based ligands with 3d metal ions and/or lanthanides ions; investigation of the luminescent and magnetic properties of the metallocomplexes.
- Synthesis and structural characterization of coordination polymers using as building blocks mono- and binuclear complexes of the functionalized fluorescein based ligands with 3d metal ions and/or lanthanides(III) and various neutral and anionic spacers; synthesis and structural characterization of metal-organic frameworks (MOFs) with carboxylate derivatives of the fluorescein as spacers.
- Investigation of the luminescent and magnetic properties of the coordination polymers.
- Synthesis of hybrid organic solids by co-crystallization of functionalized fluorescein derivatives and other organic species using specific supramolecular interactions (hydrogen bond interactions, p-p interactions) and investigation of the luminescent properties.

Conferences:

- Mihai F. RĂDUCĂ, Cristian D. ENE, Daniel AVRAM, Carmen TISEANU, Augustin M. MADALAN, *“Two-dimensional coordination polymers constructed from lanthanide(III) ions and fluorescein spacers”*, Congress SCF18, June 30th- July 4th 2018 , Montpellier & Toulouse, France (poster);
- Cristian D. ENE, Mihai F. RĂDUCĂ, Augustin M. MADALAN, *“insertion of iodine in metal-organic frameworks based on Zn(II) ions and fluorescein as ligand”*, Congress SCF18, June 30th- July 4th 2018 , Montpellier & Toulouse, France (poster).

Dissemination of Results

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