

## New series of Schiff bases for lanthanide luminescent sensitization

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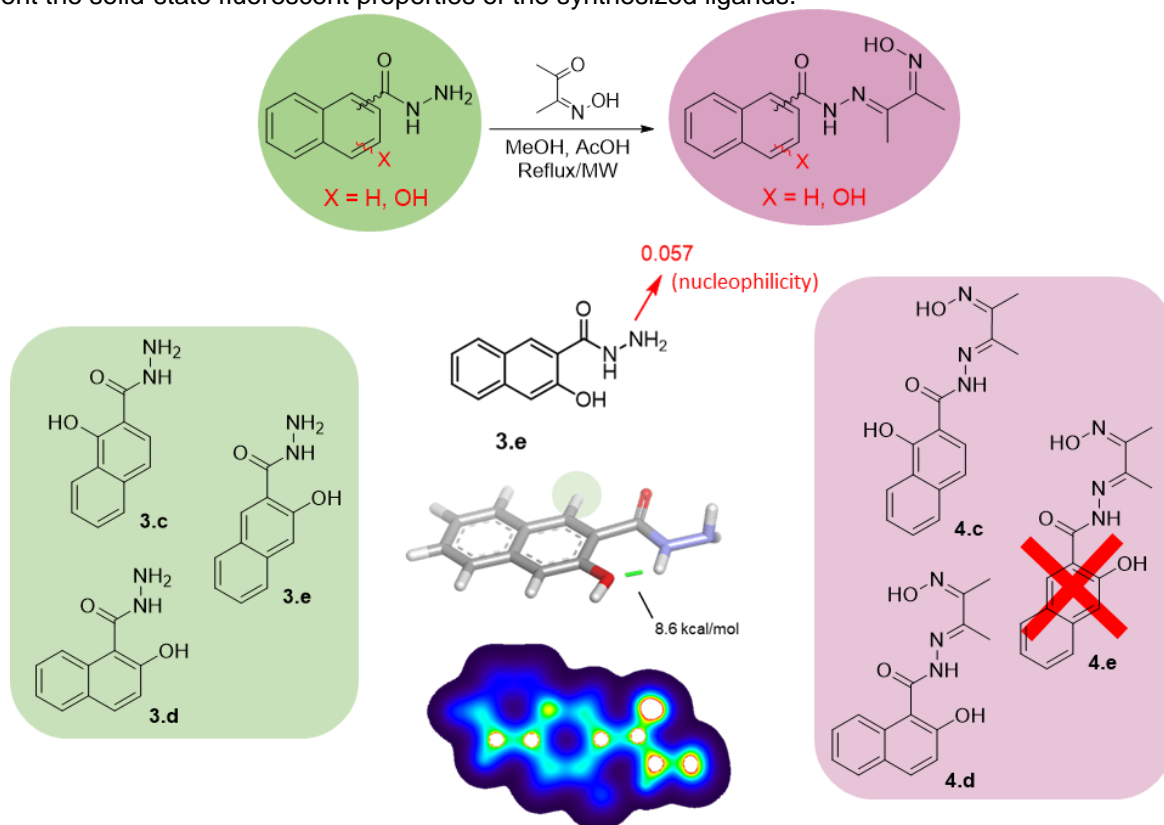
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### ABSTRACT

Design of luminescent coordination compounds based on lanthanide ions involves the synthesis of organic ligands for sensitization that improve energy absorption upon coordination with the metal center. Planar and rigid structures with high electronic  $\pi$ -delocalization are often selected for these applications.<sup>[1]</sup>

In this work, we present the synthesis of a new series of Schiff base ligands using appropriate hydrazides as precursors (**Figure 1**). These hydrazides are obtained from the reaction between carboxylic acids and hydrazine monohydrate, using 1,1'-carbonyldiimidazole (CDI) as a coupling agent.<sup>[2]</sup>

Differences in reactivity were observed among various hydrazides during the ligand formation stage. Computational calculations revealed that ligand **4.e** (**Figure 1**) could not be synthesized due to "peri" and "alpha" electronic effects, as well as intramolecular hydrogen bonding within the hydrazide structures. These factors have a significant influence on the nucleophilicity of the N-terminal of the hydrazides. Finally, we present the solid-state fluorescent properties of the synthesized ligands.



**Figure 1:** Computational studies on the reactivity differences among various hydrazides.

### ACKNOWLEDGEMENTS

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### REFERENCES

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