

Virtual Symposium for Young Organic Chemists

4-7 June
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ViSYO Chem

23 Vanadium 50.94
8 Oxygen 16.00
12 Carbon 12.01

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Book of Abstract

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Fluorinated oxadiazole derivatives, synthesis and self-assembly studies

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Fluorinated compounds have become important components of sophisticated functional materials, serving as building blocks or constituents, transcending their conventional uses as medications, additives, and electrolytes.¹ The ability of fluoro derivatives to assemble in photonic liquids (PLs) is becoming more and more prevalent in what is the wide application of materials derived ILs. At the same time, low-molecular-weight gels (LMWGs) derived from fluorinated compounds are also a highly significant class of materials that are generating a lot of interest.²

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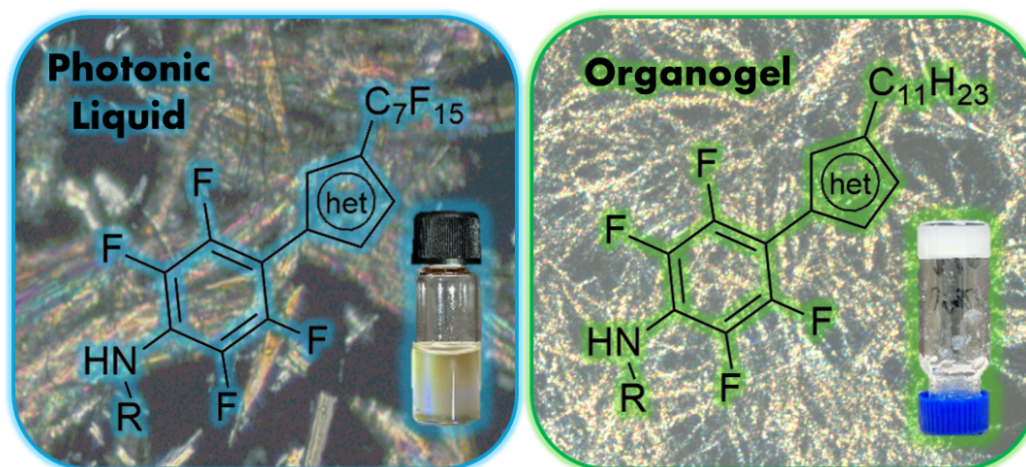


Figure 1: General structure of fluorinated oxadiazole derivatives.

In this study, 3 classes of 1,2,4-oxadiazoles were synthesized in order to investigate these fluorinated compounds for their self-assembly potential. As a matter of fact, significant different chemical-physical properties of the compounds were evident as the structures changed using different amines (aliphatic or aromatic) and the type of side chain (fluorinated or not), linked at the C3 or C5 position of the heterocyclic ring. Therefore, photonic liquids and organogel self-assembly phenomena were observed, demonstrating that the applications of these scaffolds can range in different fields.

References:

- [1] C. Zhang, K. Yan, C. Fu, H. Peng, C. J. Hawker, A. K. Whittaker, *Chemical Reviews*, **2022** 122 (1), 167-208.
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- [3] E. R. Draper, D. J. Adams, *Chem*, **2017**, 3, 390-410.