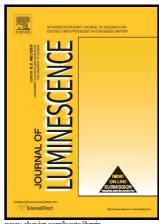
# Author's Accepted Manuscript

Multi-stimuli fluorescent behaviour of boron compounds derived from hydrazones in the solid (Thermochromism, vapochromism, and piezochromism): Synthesis, characterization, and photophysical studies

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## **ACCEPTED MANUSCRIPT**

Multi-stimuli fluorescent behaviour of boron compounds derived from hydrazones in the solid state (Thermochromism, vapochromism, and piezochromism): Synthesis, characterization, and photophysical studies.

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#### **Abstract**

Multi-stimuli responsive fluorescent (MSRF) materials can change their photophysical properties upon application of two or more external stimulus such as temperature, mechanical stress, and acid-base vapors. These smart materials have received great attention due to their evident advantages in sensors, probes, displays, data recording, and bioimaging. The synthesis and characterization of (E)-4-hydroxy-N'-(2-hydroxy-4-methoxybenzylidene) benzohydrazide (1) and their two new organoboron compounds are described [4-(10-methoxy-2-phenylbenzo[h] [1,3,5,6,2]dioxadiazaboronin-4-yl)phenol (2) and 4,4'-(2,2'-(1,4-phenylene)bis(10-methoxybenzo[h] [1,3,5,6,2]dioxadiazaboronine-4,2-diyl))diphenol (3)]. The compounds were characterized by NMR ( $^{1}$ H,  $^{13}$ C), UV/vis, fluorescence spectroscopy and high-resolution mass spectrometry (HRMS). The photophysical properties of organoboron were investigated; we found low fluorescence emission (Compound 2  $\Phi_{\rm F}$ : 0.89%, compound 3  $\Phi_{\rm F}$ : 0.93%) but in solid state showed interesting luminescent properties such as reversible thermochromism, piezochromism, vapochromism, and mechanochromism are reported.

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