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# Luminescent Mesogenic Borondifluoride Complexes with the Schiff bases Containing Salicylideneamines and $\beta$ -Enaminoketones Core Systems<sup>†</sup>

Zih-Yang Lei<sup>1</sup>, Gene-Hsiang Lee<sup>2</sup>, Chung K. Lai<sup>\*1</sup>

<sup>1</sup>Department of Chemistry, National Central University, Chung-Li 32011, Taiwan, ROC

<sup>2</sup>Instrumentation Center, National Taiwan University, Taipei 10660, Taiwan, ROC

\*Corresponding author e-mail: cklai@cc.ncu.edu.tw

**Abstract:** Three new families of borondifluoride complexes **1a–c** derived from salicylideneamines **2a** and  $\beta$ -enaminoketones **2b–c** were reported, and their mesomorphic and optical properties were also investigated. One single crystal and molecular structure of nonmesogenic BF<sub>2</sub> complex **1c** (n = 10) was resolved and the geometry of the central boron atom was tetrahedron. A larger dihedral angle of 81.3° between the two phenyl rings observed in crystal lattice was attributed to the lack of liquid crystallinity. Boron complexes **1a** formed monotropic SmA phases, while boron complexes **1b** exhibited enantiotropic SmC mesophases. The optical property of the boron complexes was dependent on their molecular structures, and they emitted a blue-to-green emission at  $\lambda_{\text{max}} = 476$ –541 nm in the solution and 488–550 nm in the solid state. This is the first group of mesogenic BF<sub>2</sub> complexes with the Schiff bases derived from respective salicylideneamines and  $\beta$ -enaminoketones.

Keywords: smectic phases; borondifluoride; luminescent; salicylideneamines,  $\beta$ -enaminoketones

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