Title:	Structure-Property Correlation of C10-(H)-Arylated-N-(pyren-1-yl)-picolinamide Regioisomers towards Cu2+ and Fe3+ Sensing
Authors:	Reji, Rosmi (/jspui/browse?type=author&value=Reji%2C+Rosmi) Tripathi, Narendra Pratap (/jspui/browse?type=author&value=Tripathi%2C+Narendra+Pratap) Rani, Kavita (/jspui/browse?type=author&value=Rani%2C+Kavita) Dalal, Arup (/jspui/browse?type=author&value=Dalal%2C+Arup) Babu, Srinivasarao Arulananda (/jspui/browse?type=author&value=Babu%2C+Srinivasarao+Arulananda) Sengupta, Sanchita (/jspui/browse?type=author&value=Sengupta%2C+Sanchita)
Keywords:	C10-(H)-Arylated-N-(pyren-1-yl)-picolinamide Cu2+ and Fe3+
Issue Date:	2021
Publisher:	Wiley
Citation:	ChemistrySelect, 6(43), 12022–12031.
Abstract:	Recently developed C10-(H)-arylated-N-(pyren-1yl)-picolinamide compounds have been investigated spectroscopically for their photophysical properties and metal ion sensing abilities. Two sets of regioisomers were selected based on their molar absorptivities and fluorescence quantum yields and classified into two series I methoxy group at meta- and para- position of phenyl ring, and series II methyl group at meta- and para- position of phenyl ring. Additionally, for better understanding on structure-property relationship, a comparison study with C-10 unsubstituted compound was also conducted. All compounds exhibited characteristic absorption and emission responses only towards Cu2+ and Fe3+ ions among all the screened metals. While the reference compound and those with methoxy substituent displayed a fluorescence turn-off behaviour, compounds with methyl groups showed fluorescence turn-on response through excimer formation at ~550 nm in the presence of Cu2+ and Fe3+. Sensing studies were performed to elucidate structure-property relationship and to obtain limits of detection, binding constants and fluorescence quenching constants. Temperature-dependent fluorescence studies were performed to distinguish the type of excimers produced by two compounds in series II with the metal ions.
Description:	Only IISER Mohali authors are available in the record.
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