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Optical Fluoride Sensing with a Bay Region Functionalized Perylenediimide Dye

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**Abstract:** A perylenediimide (PDI) derivative functionalized at the perylene core (bay region) to carry phenyl boronic acid groups was shown to interact with fluoride with changes in the emission and absorption spectrum. These changes are most likely due to fluoride-induced aggregation and/or quenching of the perylenediimide dye. The dye is also selective; among halide ions, fluoride anions generate a significant response. Thus, this class of PDI derivatives is likely to be useful in practical fluoride sensing.

**Key Words:** Chemosensor, fluorogenic sensors, chromogenic sensors, fluoride sensing, supramolecular chemistry

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