



Contribution ID: 41

Type: Poster

Structural Studies on Solid-State Emissive Zwitterionic Fluorophores

Fluorophores that emit in an aggregated state are useful for many applications, including biosensors, chemosensors and optoelectronic devices. A new class of zwitterionic organic molecules studied show high quantum yields in the solid-state, as well as reversible changes in emission spectra when subjected to anisotropic force. Two representative molecules show quantum yields ranging from 51 to 82%, as well as reversible changes in emission peak maxima up to 74 nm when mechanically grinded in a mortar and pestle. Insights into the mechanism of action are explored via ambient and high-pressure crystallography, as well as powder X-ray diffraction. Crystal packing and Hirshfeld analysis of intermolecular interactions help to rationalise the photophysical properties seen, allowing a mechanism for the emission sensitivity to be proposed that is supported by TD-DFT calculations. Overall, these novel molecules are bright and highly sensitive to their environment, which are desirable properties for their use in applications.

Level of Expertise

Student

Presenter Gender

Man

Pronouns

He/Him

Do you intend to attend UM2022

In person - Melbourne

Students Only - if available would you be interested in student travel funding

Yes

Students Only –Do you wish to take part in the Student Poster Slam

Yes

Terms and conditions (Please confirm that you have read all the requirements and agree to the conditions)

Yes

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