

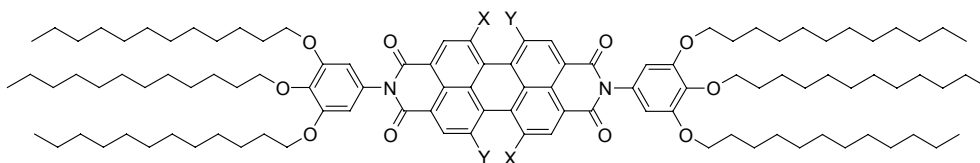
# ORGANIZATION AND CHARGE CARRIER MOBILITIES OF PERYLENEBISIMIDE DYES

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A series of perylene tetracarboxylic acid bisimides bearing 3,4,5- tridodecyloxyphenyl substituents on the imide N atom and different substituents in the bay positions of the perylene core were synthesized. Their spectroscopic properties and aggregation behaviour in low-polarity solvents were studied by absorption and fluorescence optical spectroscopy. The results showed that the compounds form one-dimensional fluorescent J-type aggregates in the micromolar to millimolar concentration range. In the bulk liquid crystalline phases were observed and characterized by DSC, X-ray diffraction and polarizing microscopy. All compounds showed hexagonal or rectangular columnar phases over a broad temperature range, which do not crystallize upon cooling. The charge carrier mobilities of these compounds were measured using the pulse-radiolysis time-resolved microwave conductivity (PR-TRMC) technique. Lower limits for the one-dimensional charge carrier mobilities in these samples were estimated to be ca.  $0.02 \text{ cm}^2/\text{Vs}$  with little temperature dependence between - 50 and 100 °C.



## References

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