NONLINEAR OPTICAL PROPERTIES OF METAL FREE AND NICKEL BINUCLEAR PHTHALOCYANINES

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Considerable efforts have been dedicated to the synthesis of novel phthalocyanines (Pcs), with the aim of improving their functional properties. Monomeric and low symmetry Pcs have been largely studied with the aim of optimising their second order nonlinear optical (NLO) properties for applications in practical area such as telecommunication systems, high speed electro-optic switching, data processing and optical limiting [1-3]. This work employs the open and closed Z-scan aperture technique to comparatively study the nonlinear optical (NLO) properties of nickel and metal free 4-tert-butylphenoxy phthalocyanine, biphenyl bridged bis-4-tert-butylphenoxy phthalocyanine and naphthalene bridged bis-4-tert-butylphenoxy phthalocyanine, see Figure 1.

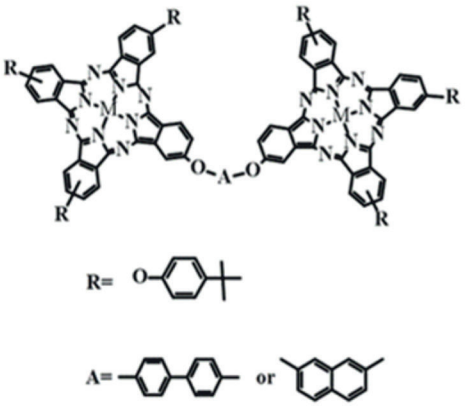

Figure 1: Binuclear phthalocyanine

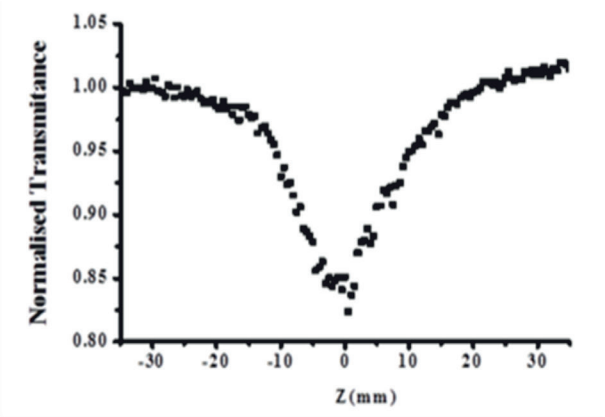

Figure 2: Open aperture Z-scan trace

References
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