

# SWITCHING BETWEEN TADF AND RTP IN THE METHYL SUBSTITUTED PHENOTHIAZINE COMPOUNDS

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Thermally activated delayed fluorescence (TADF) is one of the methods for harvesting luminescence from triplet states via reverse intersystem crossing (rISC) in organic molecules. [1] Donor-acceptor-donor (D-A-D) molecules have strong intramolecular charge-transfer (ICT) state and it is very important for creation of strong TADF emitter. [2] A fundamental principle of planar ICT (PICT) and twisted ICT (TICT) is demonstrated to obtain selectively either room temperature phosphorescence (RTP) or thermally activated delayed fluorescence (TADF), respectively. [3]

In this research we have TADF-based emitters of methyl-phenothiazine derivatives, because of their quasi-axial (ax) and quasi-equatorial (eq) conformers have very interesting properties especially for TADF. We used time-resolve fluorescence method to investigate the behavior of emission properties at different temperatures. We establish that different acceptors can change emitters properties from RTP to TADF.

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