



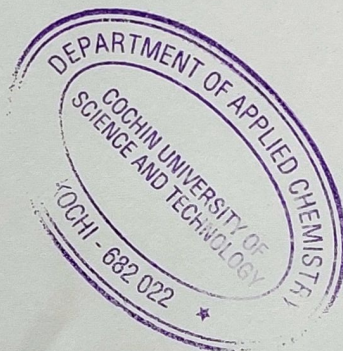
23/03/2023

**CERTIFICATE**

This is to certify that Dr. Nithya Mohan, Assistant Professor, Basic Science and Humanities department, SCMS School of Engineering and Technology is associated with one of my project "Salen Schiff base complexes: Synthesis and applications" from 01/11/2022.

Dr. P.V. Mohanan

Professor



## Work Report of the collaborative work


### Third order NLO studies on Schiff base complexes with aliphatic diamine spacer groups

We have synthesized novel symmetrical salen schiff base complexes and the third order linear and nonlinear optical properties were studied. The experimental results revealed that the synthesized compounds are good NLO active materials and the third order nonlinear property arises from two photon absorption (TPA). Materials having such two photon absorption (TPA) have wide range of application in the field of optical storage memory, photodynamic therapy<sup>1</sup> etc. The optical limiting values show that the reported compounds are good optical limiters. The experimental results were substantiated with theoretical calculations carried out using DFT at B3LYP/6-31G\* level of theory. The system with the highest  $\pi$ -delocalisation exhibited the highest activity. The total dipole moment, polarizability and first hyperpolarizability were also calculated at the same level of theory which are also in line with the experimentally observed results.



23/3/23

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