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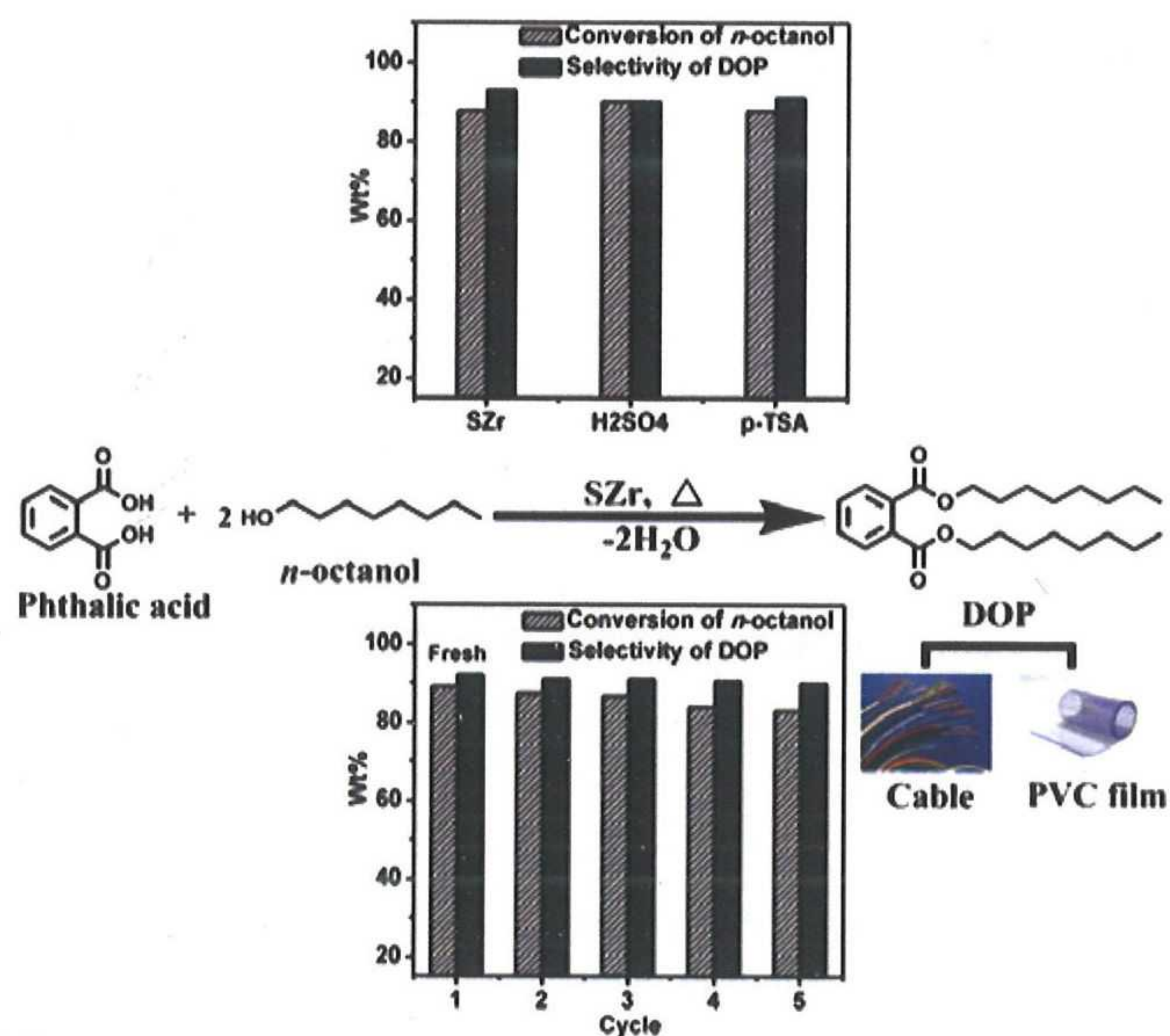
NUMBER 7

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CONTENTS

747 **Solvent-free facile synthesis of di-octyl phthalate over heterogeneous sulfated zirconia acid catalyst**

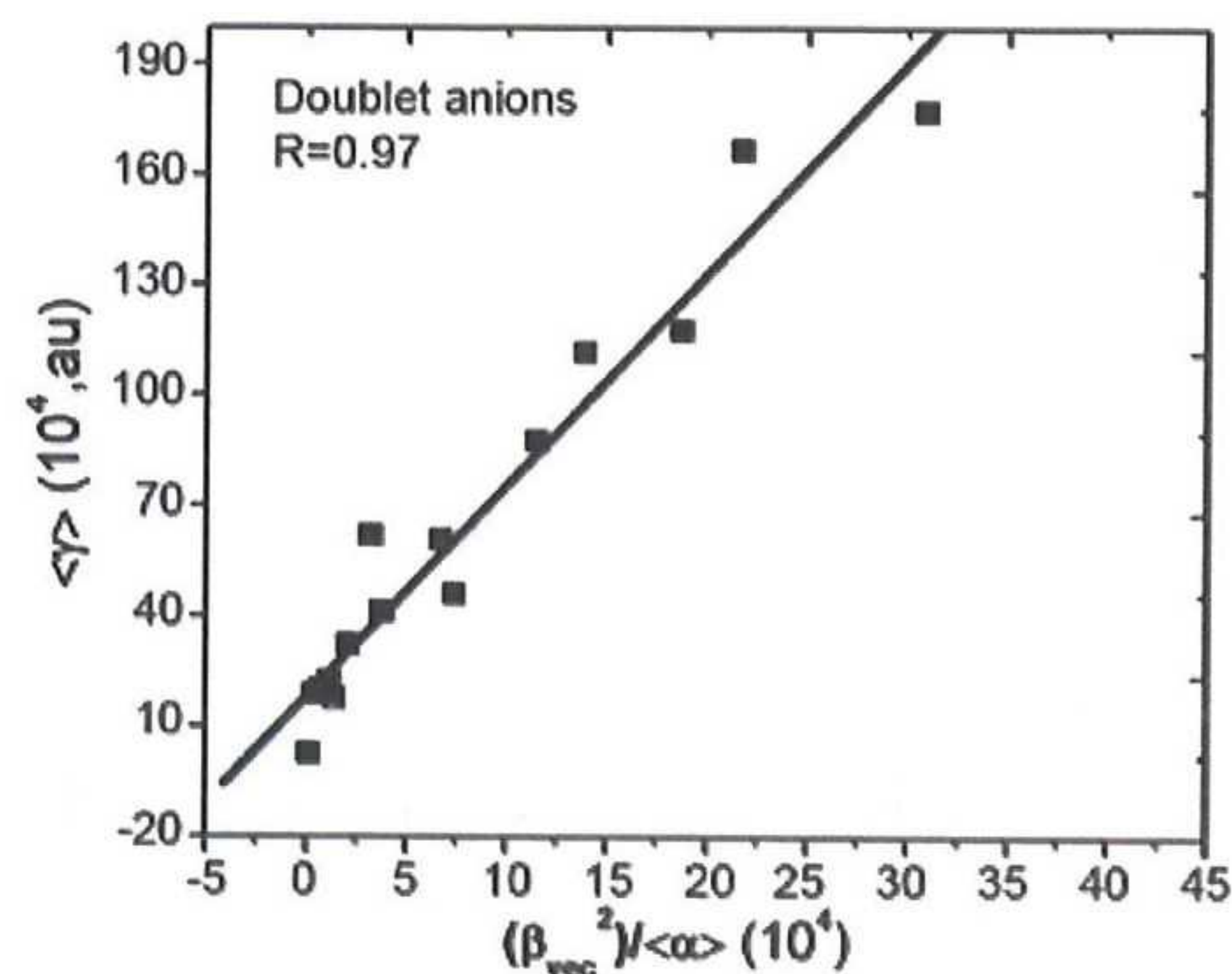
The re-usable SZr solid acid catalyst exhibits activity similar to that of H_2SO_4 and *p*-TSA for synthesis of DOP as plasticizer via esterification of phthalic acid and *n*-octanol.



Ajay M Parmar, K Saravanan, Beena Tyagi* & Kannan Srinivasan

756 **Effect of charge and spin multiplicity on hyperpolarizabilities of donor-acceptor substituted polyenes**

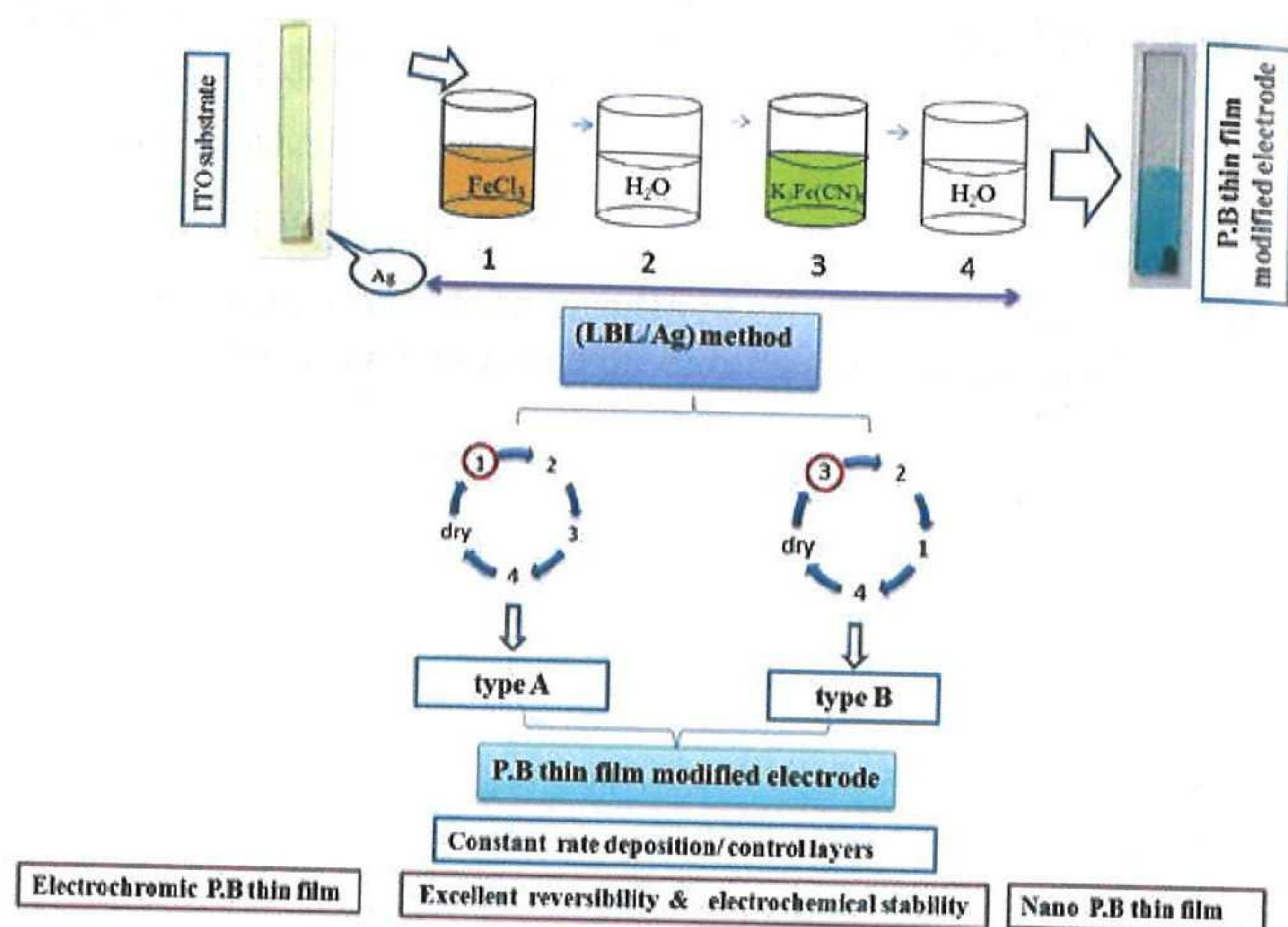
Theoretical studies on the ground state structure and nonlinear optical properties of donor-acceptor substituted singlet and triplet (neutral) and doublet (mono-positive and mono-negative) polyenes have been carried out. Isotropic polarizability and the second-hyperpolarizability are predicted to be larger for the doublet anions in which the NH_2 group is pyramidal. The position of nitrogen atom in the π -conjugative path strongly modulates the magnitudes of both the first- and second-hyperpolarizabilities of the investigated polyenes.



Subhadip Ghosh, Ria Sinha Roy, Paramita Banerjee, Avijit Mondal, K Hatua & Prasanta K Nandi*

767 Layer-by-layer synthesis of nano Prussian blue electrochromic thin film modified electrodes

A novel simple non-electrical method has been developed for synthesis of modified electrodes comprising Prussian blue nano thin film on indium tin oxide substrates, by layer-by-layer assembly method combined with sacrificial Ag anode. The nano thin film shows excellent stability and acceptable electrochromic properties.

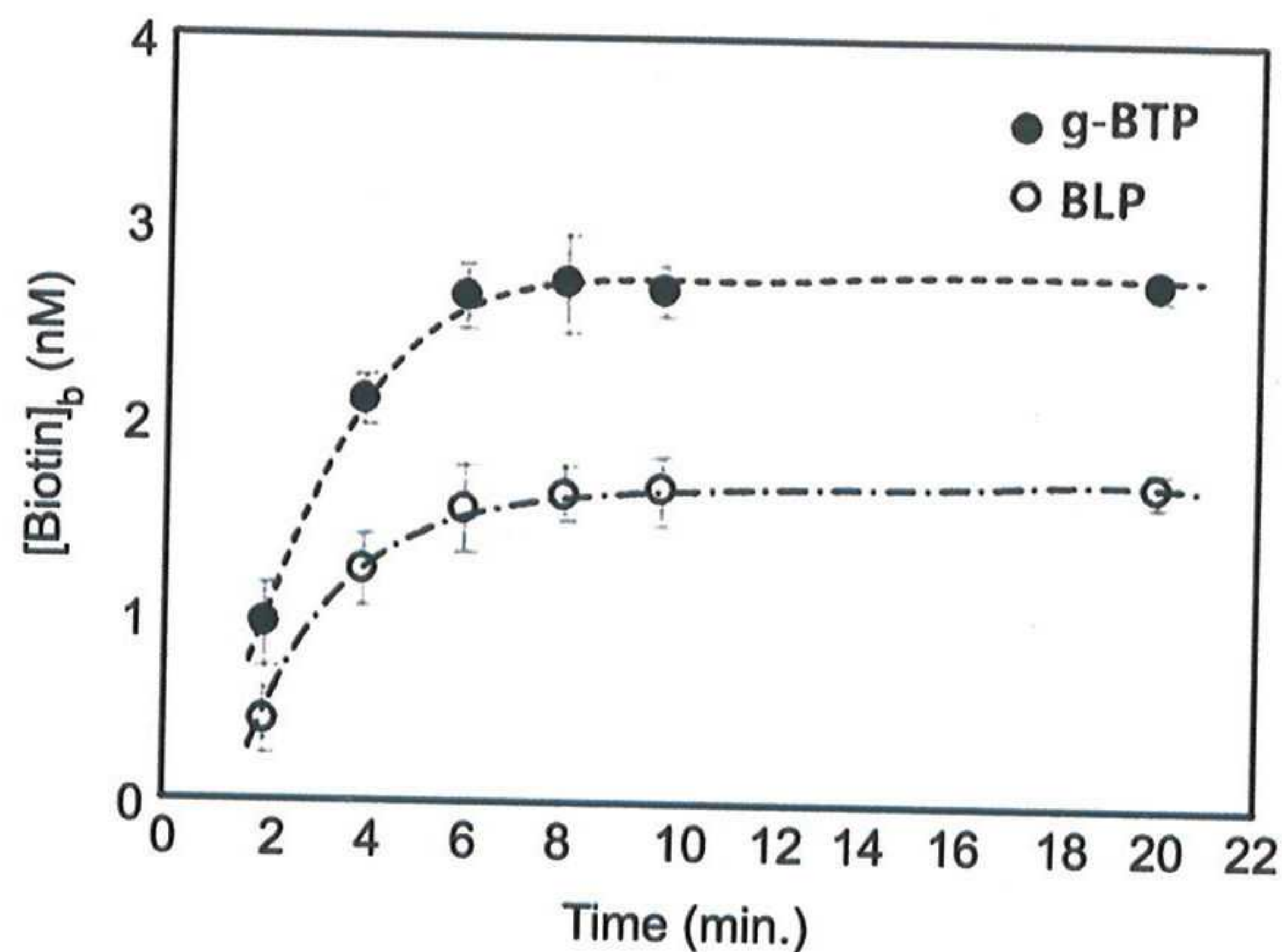


Shaza Al Shaal*, Francois Karabet & Hasan Kellawi

Notes

774 Geminally biotinylated cyclotriphosphazenes as molecular binding probe

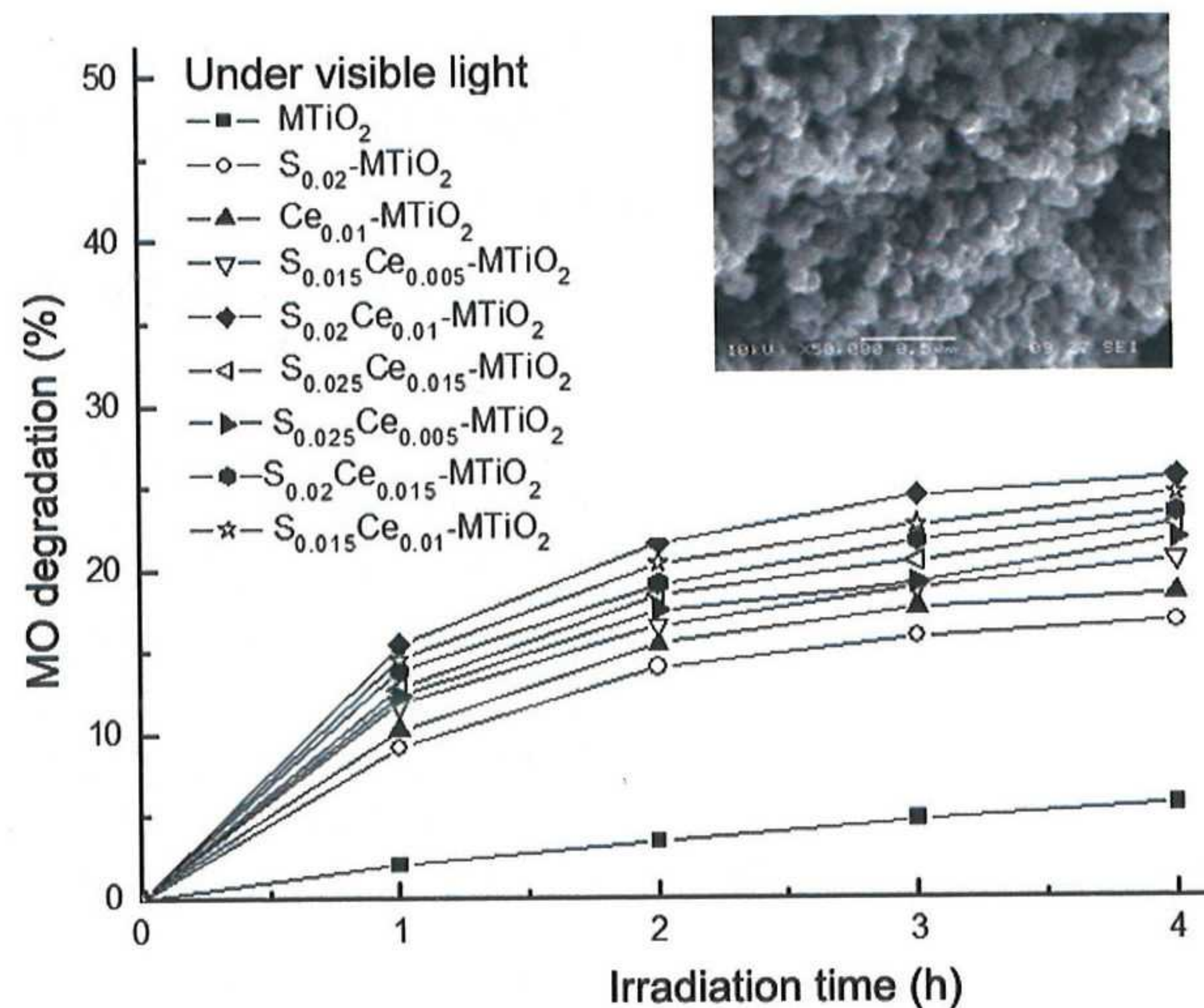
Biotinylated cyclotriphosphazene with geminal octopus-like molecular shape has been prepared by stepwise substitution of cyclotriphosphazene with hydrophilic MPEG and biotin moieties. Geminal biotinylated cyclotriphosphazene polymer, g-BTP, shows higher binding affinity to avidin and is polydispersed as compared to the random coil biotinylated linear polymer, BLP.



Xuebin Ma, Tingting Xu, Wei Chen, Rui Wang, Zheng Xu, Bo Chi* & Zhiwen Ye*

780 Sulphur and cerium co-doped mesoporous titanium dioxide photocatalysts and their photocatalytic activity in the degradation of methylene orange

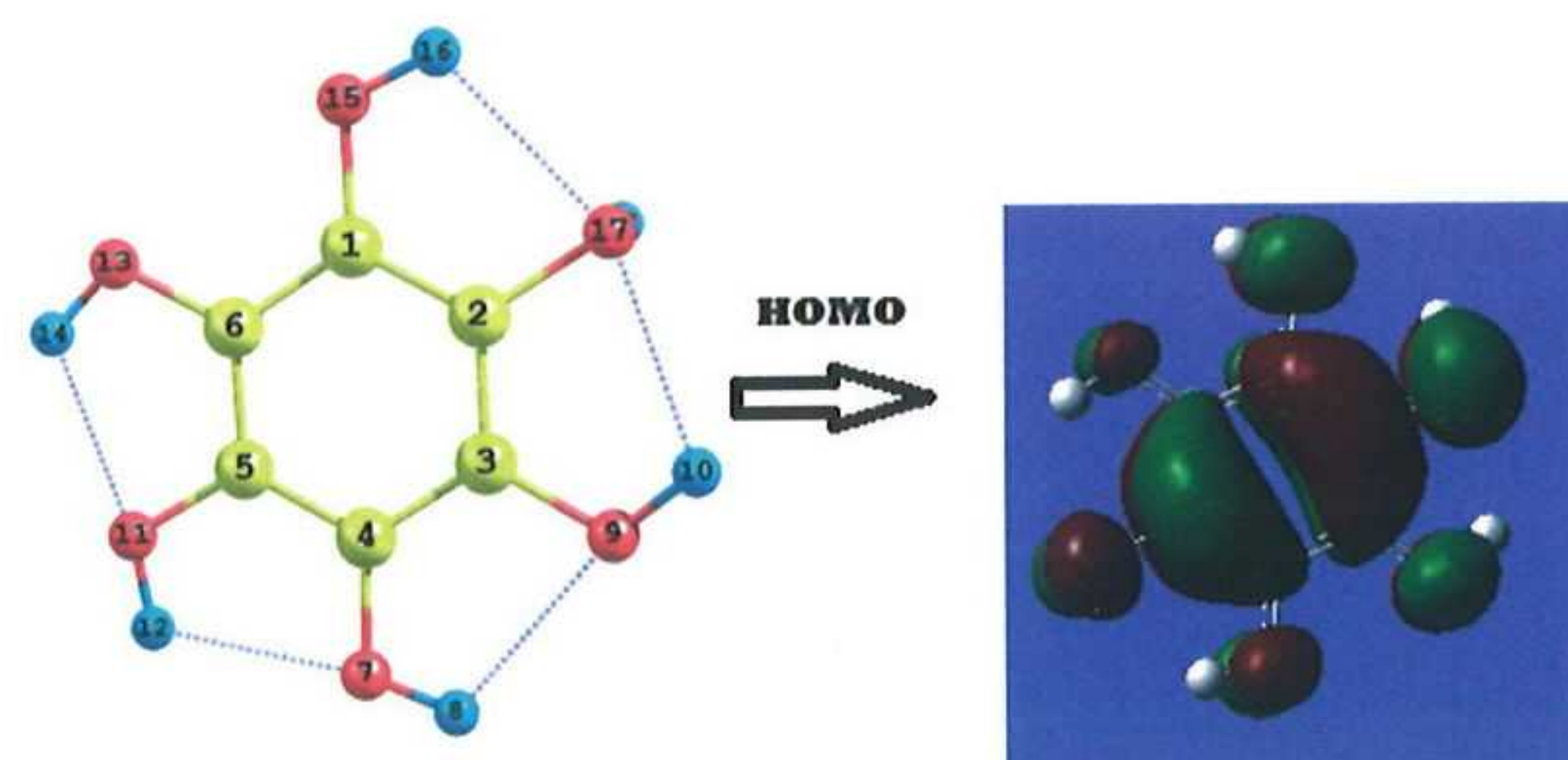
Sulphur and cerium co-doped mesoporous titanium dioxide photocatalysts have been synthesized and characterised. Higher degradation of methyl orange has been achieved with the doped photocatalysts with 2 mol% S and 1 mol% Ce co-doped MTiO_2 catalysts showing the highest activity.



Zelin Niu, Zhanping Song*, Jingping Qiu, Xiaogang Sun & Jun Xing

786 DFT calculations of effective reactive sites of inositol

The 2-OH site has been found to be the most reactive site of inositol by the DFT method. These results have been supported by results obtained from BDE, HOMO-LUMO and MEP methods. The strong and weak intramolecular interactions have also been identified by NBO analysis.



D Jeevitha, K Sadasivam* & R Praveena

791 Guide to Authors

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