

## **Electron Magnetic Resonance Study on the Photoinduced Charge Separation of N-alkylphenothiazine in PhiTEOS, VTEOS and METOS Gel Matrices**

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The photoproduced cation radical of N-alkylphenothiazine (PC<sub>n</sub>, n = 3, 6, 9, 12, 16) doped in the different kind of matrices of phenyltriethoxysilane (PhiTEOS), vinyltriethoxysilane (VTEOS) and methyltriethoxysilane (METOS) was comparatively studied with electron spin resonance (ESR) and electron spin echo modulation (ESEM). The photoinduced charge separation efficiency was determined by integration of ESR spectra which correspond to the amount of photoproduced cation radical in the matrices. This was correlatively studied with the polarity and pore size of the gel matrices. The polarity of the matrices was comparatively determined by measuring I<sub>max</sub> values of PC<sub>n</sub> in the different matrices. The relative pore size among the matrices was determined by measuring D-modulation depths of ESEM and relative proton matrix of ENDOR line widths of the photoproduced cation radical of PC<sub>n</sub>.