

**Novel C60 based hydrogen-bonded
supramolecule: synthesis, characterization and
self-assembly**

Yuliang Li,¹ Zhiqiang Shi,¹ Shengxiong Xiao¹ and
Daoben Zhu¹

¹Institute of Chemistry, Chinese Academy of Sciences
Institute of Chemistry
Chinese Academy of Sciences
Beijing 100080
P.R. China

Novel self-assembly systems of donor molecules [ferrocene and poly (phenylene vinylene) as donor units] with organofullerene by a three-point hydrogen-bonding interaction were designed and established. The formation of hydrogen bonding was established by ¹H-NMR studies in CDCl₃. Fluorescence quenching experiments indicated that the fluorescence of U-PPV was quenched much larger by DAP-C60 (K_{SV} = 1.04E+105 M⁻¹) than by N-methyl-pyrrolidino[60]fullerene (MPYLD-C60) (K_{SV} = 4.61E+104 M⁻¹) without formation of three-point hydrogen bonds with U-PPV. Electrochemical experiment showed that electronic interactions between organofullerene and ferrocene took place through non-covalent triple hydrogen bondings in ground state.