

Electrochemical and Photophysical Properties of Novel Ferrocene(Donor)-Bridge-Fullerene(Acceptor) Dyads

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There has been a growing interest to synthesize various donor-bridge-acceptor systems in which intramolecular charge transfer interactions eventually produce an efficient and long-lived photo-induced charge separation[1-3]. In these systems the through bond interaction via the bridge mainly depends on the nature of the bridge such as conjugation, rigidity and distance, as well as the strength of the donor- and acceptor moieties. In addition, spatial array of donor and acceptor moieties gives more influential effects to these systems.

In line with these aspects, we report herein the synthesis of three novel ferrocene-bridge-acceptor dyads **1-3**. Compound **1** has one donor and one acceptor, compound **2** possesses two donors and one acceptor, and compound **3** consists of one donor and two acceptors, respectively. These compounds were characterized by spectroscopic methods such as NMR, FT-IR and MALDI-TOF MS. Electrochemical properties from cyclic voltammetry and photochemical properties from absorption and emission spectroscopies are discussed.

Reference

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3. R. M. Williams, M. Koeberg, J. M. Lawson, Y.-Z. An, Y. Rubin, M. N. Paddon-Row, J. W. Verhoeven, *J. Org. Chem.* 61, 5055-5062 (1996)

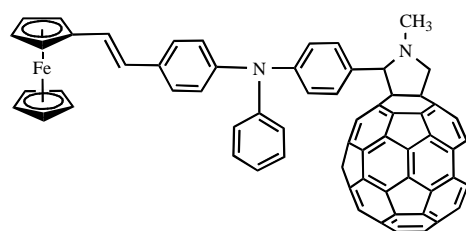


Fig 1. Compound 1

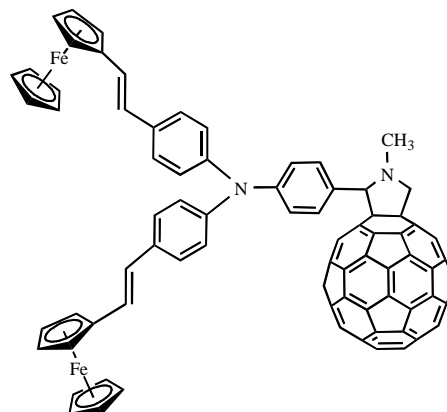


Fig 2. Compound 2

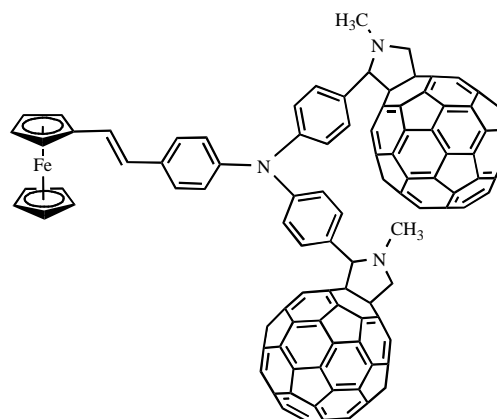


Fig 3. Compound 3