Spectroelectrochemistry as a Tool in Understanding Fullerene Redox Processes

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The use of thin-layer UV-visible spectroelectrochemistry as a tool in elucidating the various redox processes of fullerenes is discussed. Examples are given for the case of C_{60} and related organofullerenes, as well as for porphyrin-fullerene dyads that will undergo one or more redox processes at the fullerene part of the molecule to generate anionic species in solution. Comparisons are made between the spectra of chemically and electrochemically generated fullerene anions and this is discussed in terms of diagnostic "marker bands," which are characteristic of a given reduced form of the fullerene.