

New Endohedral Fullerene Compounds and Their  
Reactivity Differences

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A redox-based method has been developed that takes advantage of oxidation potential differences between endohedral fullerene isomers to effectively separate these without employing HPLC methods.  $I_h$  and  $D_{5h}$  isomers have been separated in macroscopic amounts, enough to be able to explore the chemistry and derivatives of the  $D_{5h}$  isomers.

New members of a particular class of endohedral fullerene compounds, the metallic sulfides, have been prepared and characterized using a variety of experimental and computational techniques. The results have clearly established the importance of electronic effects as well as geometric ones that result as a consequence of the shape of the encapsulated clusters and the geometries of the selected cages.

Finally, new derivatives of some of these endohedral fullerenes have been synthesized and characterized and their properties have been explored, including their photovoltaic responses in devices.

These results will be presented and discussed