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INTRODUCTION OF PERFLUOROALKYL GROUPS – A NEW APPROACH

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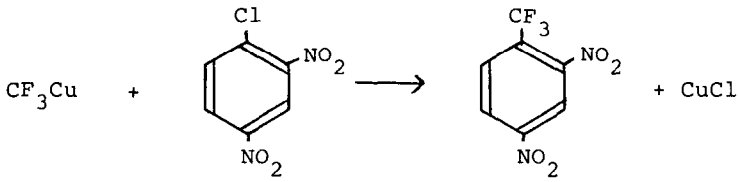
With the increasing commercial interest in organic compounds having CF_3 (and other perfluoroalkyl) groups, a variety of methods for their introduction is desirable.

A method using a novel starting material - a perfluoroalkyl sulphonyl chloride, $R_f\ SO_2Cl$ - has been developed. When this is decomposed in the presence of copper, in a solvent such as dimethyl acetamide, and then reacted with an activated aromatic halide it replaces the halogen with the R_f group. The reaction is assumed to involve the intermediacy of a perfluoroalkyl copper, and the following equations illustrate the process:-

$$CF_3SO_2Cl + 2\ Cu \longrightarrow CF_3Cu + SO_2 + CuCl$$



The advantages, disadvantages and scope of this route will be discussed.