

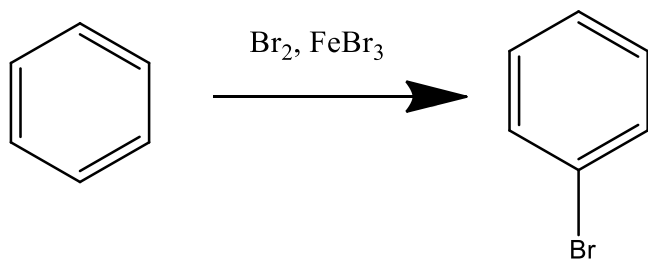
Answer on Question #54114 – Chemistry – Organic Chemistry

Question:

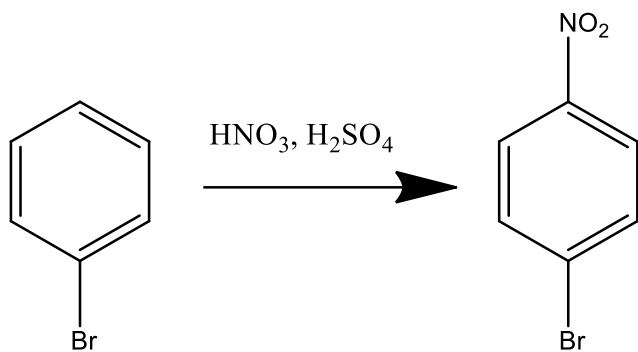
Suggest a synthesis of 4-nitrobenzenesulfonic acid from benzene including all the reagents paying particular attention to the order of reaction to the functional groups.

Answer:

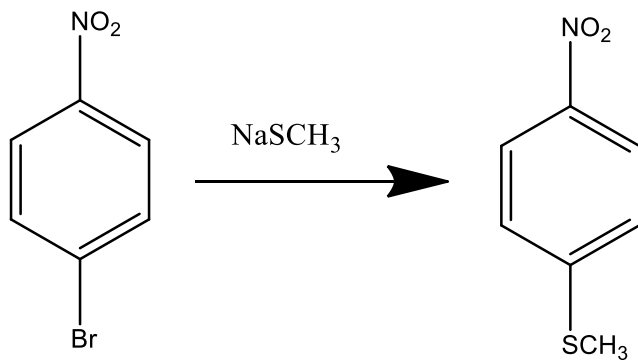
The first stage is a bromination reaction:

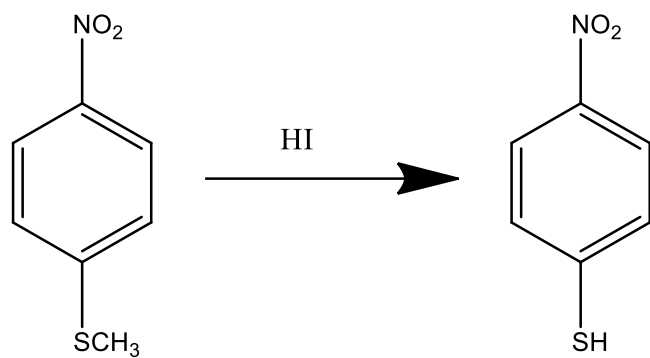


Since Br is a ortho/para directing group, a nitration of bromobenzene gives a para-derivative:



Then substitution of Br into $-\text{SCH}_3$ with followed by hydrolysis of thioether produces an aromatic thiol:





The last step is an oxidation of 4-nitrothiophenol with strong oxidant:

