Synthetic utility of phenylsulfonyl allenes

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$$\begin{array}{c} R \\ SO_2Ph \end{array} \xrightarrow{[2+2]} \begin{array}{c} R^1 \\ SO_2Ph \end{array} \xrightarrow{R^1, R^2 = H} \begin{array}{c} Br \\ SO_2Ph \end{array} \xrightarrow{R} \begin{array}{c} R \\ R \end{array}$$

Sulfones constitute a broad class of compounds that exhibit synthetically useful physicochemical properties. In particular, phenylsulfonyl allenes represent compact, highly flexible synthetic intermediates that engage in a variety of fundamental processes, including cycloadditions and nucleophilic & electrophilic capture. Strategies for leveraging this chemistry to access cyclopentenones, furan derivatives, and annelated cylobutanes are discussed.



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