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DONOR-ACCEPTOR SUBSTITUTED CYCLOPROPANE

PANAWAN MOOSOPHON : 1-[(2-METHOXYETHOXY)METHOXY]-2-
(PHENYLSULFINYL)CYCLOPROPANE AS A THREE-CARBON SYNTHON.

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The anion **2** could be generated from the sulfoxide **1** by reacting with LDA or *n*-BuLi in THF at $-78\text{ }^{\circ}\text{C}$. The anion **2** reacted with alkylating agents and carbonyl compounds to afford compounds **3** and **4** in moderate yields with retention of configuration at the C-2 position. Compounds **3** underwent ring-opening upon treatment with trifluoroacetic anhydride / Pr^i_2NEt in CH_2Cl_2 at $-78\text{ }^{\circ}\text{C}$ for 0.5 h to provide a mixture of β -phenylthio- α,β -unsaturated aldehydes **5** and β -phenylthio- β,γ -unsaturated aldehydes **6** in good yields. We considered this synthetic conversion as a novel Pummerer-type mediated ring-opening of β -alkoxy substituted cyclopropyl sulfoxide at low temperature. In addition, we found that ring-opening of compounds **4** to β -phenylsulfinyl- β,γ -unsaturated aldehydes **7** proceeded smoothly in excellent yields, when the reaction was treated with boron trifluoride ethyl etherate at $0\text{ }^{\circ}\text{C}$ for 2 h.

