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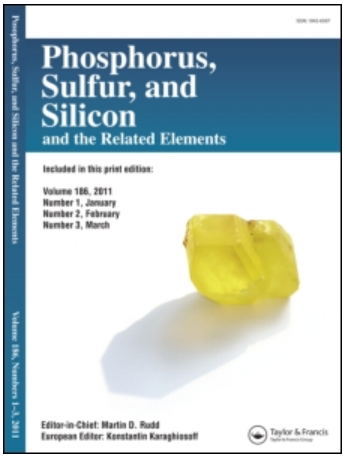

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THE USE OF SULFINATE ANIONS IN TERPENOID SYNTHESIS

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THE USE OF SULFINATE ANIONS IN TERPENOID SYNTHESIS

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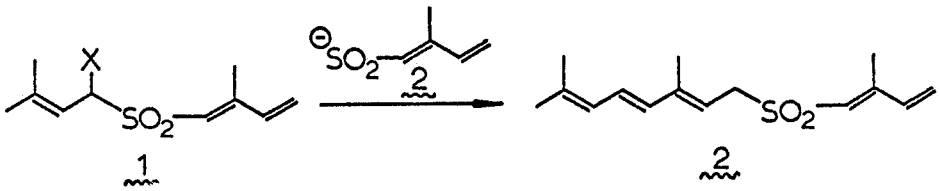
Sulfinate anions of type 2 have proved to be excellent building blocks for the construction of isoprenoid polyenes, starting from haloalkyl 2-methylbutadienylsulfone 1.



The actual chain-lengthening process consists of a Michael addition of 2 to the butadienylsulfone moiety of 1, followed by a halosulfone rearrangement to 3. Halogenation of 3 at the allylic position allows repetition of the process.
The method has been employed for the synthesis of head-to-tail coupled isoprene derivatives and is baptized Michael induced-Ramberg-Bäcklund-synthesis (MIRB-synthesis).

By variation of the reaction conditions, the methyl group of the Michael acceptor system can be formally migrated to the adjacent carbon atom (4 ⟶ 5), prior to the chain lengthening.
This isomerization leads to tail-to-tail condensation of the isoprene synthons and may find application to the synthesis of carotenoids.

Some mechanistic details and applications will be discussed.

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