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Microwave-Assisted and Thermal Synthesis of Calix[4]arene Derivatives

(Article)

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Abstract

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Abstract: Some tert-butylcalix[4]arene derivatives were synthesized by thermal and microwave methods. The microwave method was conducted in two ways: (1) all the reactants were added in one batch and (2) the reactants were added in two batches under different conditions. Tetrabutylammonium iodide (TBAI) was used in both methods, and its effect on the reaction rate was studied. In general, the duration of the microwave-assisted reactions in the presence of TBAI, especially in the two-batch method, was shorter, and the yields were higher, than in the thermal reaction. The highest yield of (S)-glycidyl calixarene derivative by the thermal method was obtained by using K_2CO_3 as a base with MeCN as a solvent in the presence of TBAI, while the lowest yield of the same compound was observed when using acetone in the absence of TBAI. All the synthesized calix[4]arene derivatives were characterized by ^1H and ^{13}C NMR experiments. © 2020, Pleiades Publishing, Ltd.

SciVal Topic Prominence

Topic: Microwave Irradiation | Reactors | Cavity Resonators

Prominence percentile: 91.129

Chemistry database information

Substances

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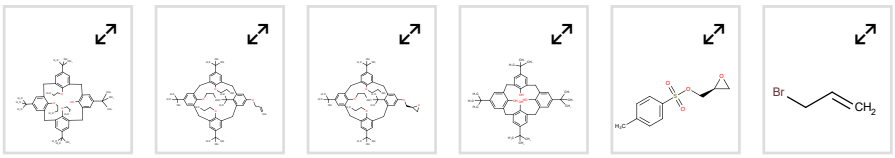

Author keywords

calix[4]arenes | microwave synthesis | tetrabutylammonium iodide

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