T. T. NGOC, N. GRABICKI, E. IRRAN, O. DUMELE*, J. F. TEICHERT* (TECHNISCHE UNIVERSITÄT CHEMNITZ, HUMBOLDT-UNIVERSITÄT ZU BERLIN AND IRIS ADLERSHOF, GERMANY)

Photoswitching Neutral Homoaromatic Hydrocarbons

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Neutral 6π and 10π Homoaromatics

Significance: Neutral homoaromatic molecules are considered as a class of veiled species mainly owing to the difficulty inherent to their syntheses, isolation and characterizations. Inspired by the previously studied unstable elassovalene, the authors herein achieve a series of novel neutral homoaromatic hydrocarbons with enhanced stability by reducing the ring strain.

Comment: Facilitated by Cu(hFacac)₂, an intramolecular Buchner dearomatization is performed to afford triasterane, which upon oxidation produces a stable homoaromatic molecule. Interestingly, this homoannulene ester is found to undergo a reversible photochemical rearrangement via [1,11]-sigmatropic shift, thereby switching between the 6π and 10π homoaromatic structures.

Category

Synthesis of Materials and Unnatural Products

Key words

neutral homoaromatics

intramolecular Buchner reaction

dearomatization photoswitch



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