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Editors' Choice

This week the ChemInform editors have been strongly impressed by the following remarkable study:

Indan derivatives

Q 1050

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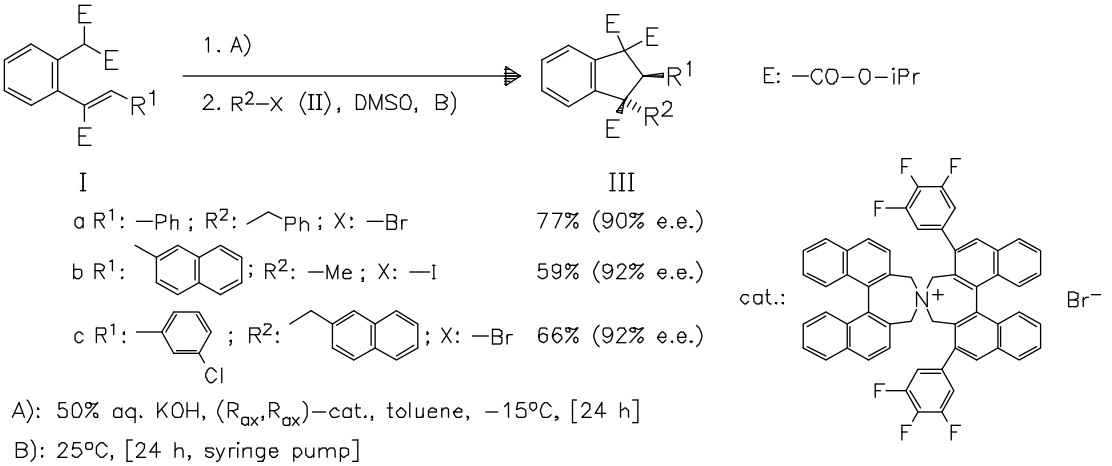
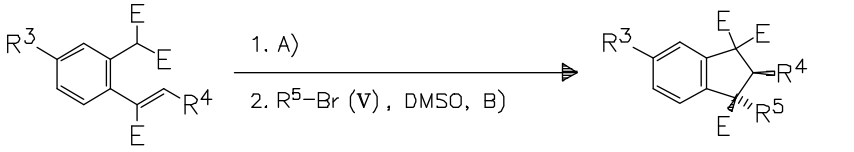
20- 103

Catalytic Enantioselective Synthesis of Indanes by a Cation-Directed 5-endo-Trig Cyclization. — The indanes are enantioselectively obtained as single diastereoisomers by a kinetically unfavorable 5-endo-trig cyclization, a rare mode of reaction. The use of KOH predominantly affords the thermodynamic anti-isomer. The 2-substituent of the indane and the electrophile can be varied without compromising diastereo- or enantioselectivity, whereas the introduction of an group at the 7-position of the indane decreases the enantioselectivity [e.g. reaction of (VII)]. A synthesis of orthogonally functionalized indanes is also presented [e.g. (XII)]. — (JOHNSTON, C. P.; KOTHARI, A.; SERGEIEVA, T.; OKOVYTYY, S. I.; JACKSON, K. E.; PATON, R. S.; SMITH*, M. D.; Nat. Chem. 7 (2015) 2, 171-177, http://dx.doi.org/10.1038/nchem.2150 ; Chem. Res. Lab., Univ. Oxford, Oxford OX1 3TA, UK; Eng.) — C. Gebhardt

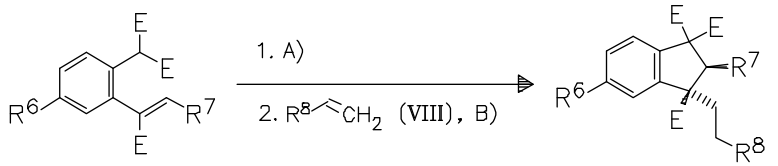




IV VI

a R3: –Me ; R4: ; R5: 82% (98% e.e.)

b R3: –O–Me ; R4: –O–Me ; R5: 85% (74% e.e.)

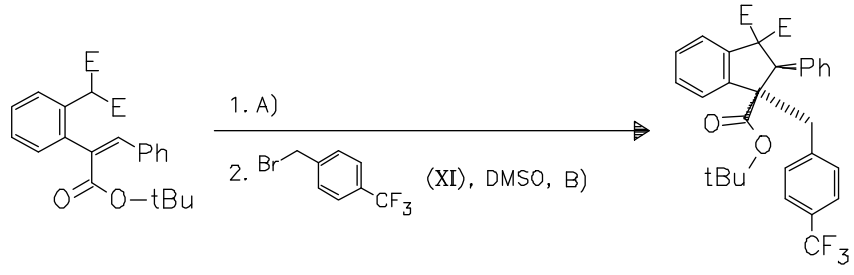


VII IX

a R6: –Me ; R7: ; R8: 31% (4% e.e.)

b R6: –CF3 ; R7: –O–Me ; R8: –CN 73% (14% e.e.)

c R6: –F ; R7: –O–Me ; R8: –CN 72% (42% e.e.)



X XII 84% (90% e.e.)

