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Hypervalent Iodine Chemistry Recent Advances and Applications

Guest editors: Stéphane Quideau[a] and Thomas Wirth[b]

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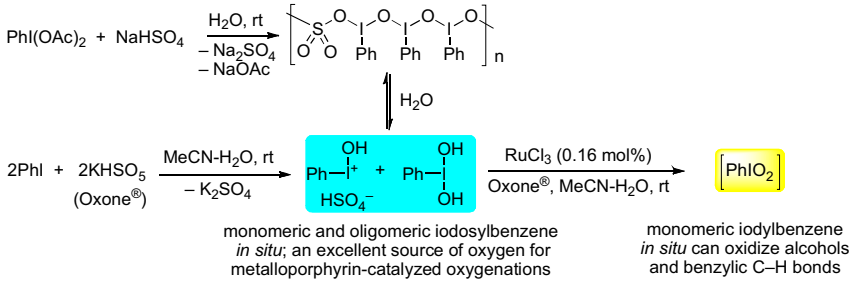

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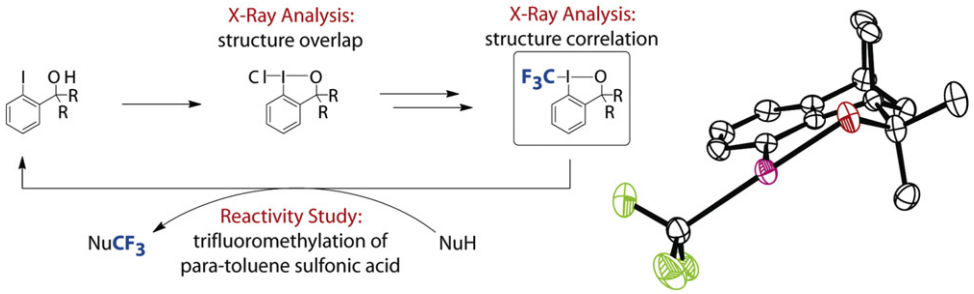
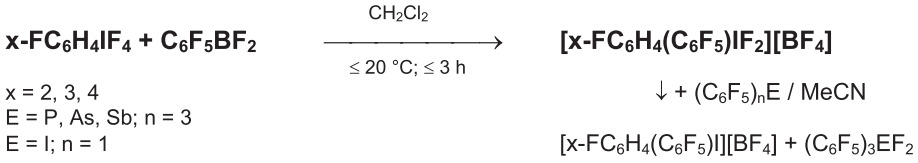


A first methodical approach to salts with unsymmetrical fluorophenyl(pentafluorophenyl)difluoroiodonium(V) cations $[R_f(R_F)IF_2]^+$ (R_f=*x*-FC_6H_4, *x*=2, 3, 4; R_F=C_6F_5) **pp 5762–5767**
Hermann-Josef Frohn*, André Wenda, Ulrich Flörke



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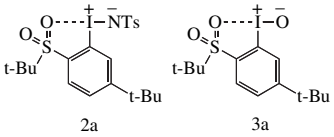
Bindu V. Meprathu, John D. Protasiewicz*



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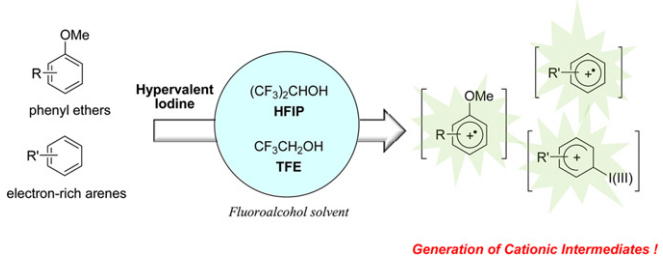
Toshifumi Dohi, Nobutaka Yamaoka, Yasuyuki Kita*



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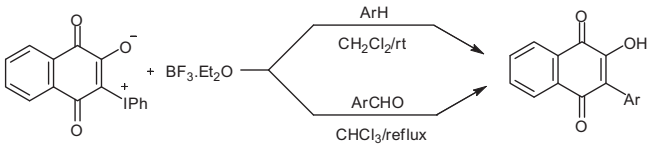
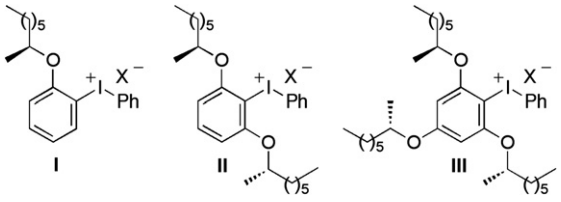
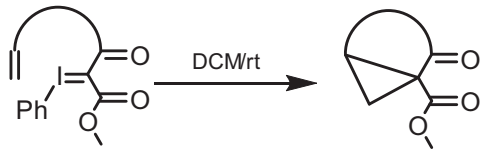


Design and asymmetric synthesis of chiral diaryliodonium salts **pp 5793–5800**
Nazli Jalalian, Berit Olofsson*



Metal-free intramolecular cyclopropanation of alkenes through iodonium ylide methodology **pp 5801–5810**
Robert M. Moriarty*, Sachin Tyagi, Mark Kinch



Intramolecular cyclopropanation of alkenes occurs thermally with iodonium ylides in the absence of conventional metal catalysts such as Rh(II) and Cu(II). In rigid molecular systems conversions are near quantitative. A mechanism is proposed involving formal 2+2 cycloaddition followed by reductive elimination of PhI to yield the cyclopropane.

A versatile PIFA-mediated approach to structurally diverse pyrrolo(benzo)diazepines from linear alkynylamides **pp 5811–5818**
Leticia M. Pardo, Imanol Tellitu*, Esther Domínguez*

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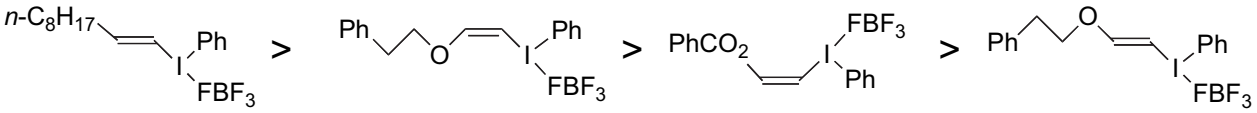
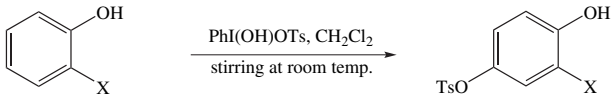
Kazunori Miyamoto*, Takuji Okubo, Masaya Hirobe, Munetaka Kunishima, Masahito Ochiai

Rates of vinylic S_N2 reactions with *n*-Bu_4NBr decrease in the following order:



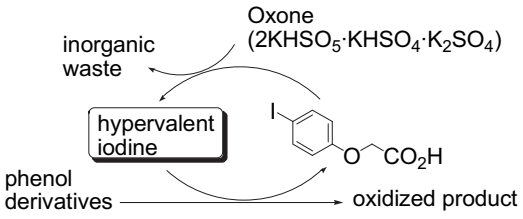
A novel and convenient approach for tosyloxylation of aromatic ring of some *ortho*-substituted phenolic compounds using [hydroxy(tosyloxy)iodo]benzene **pp 5827–5832**
Om Prakash*, Manoj Kumar, Rajesh Kumar



1 2

The oxidation of some substituted monohydric phenols, containing electron-withdrawing substituents at the *ortho* position to the phenolic group, with [hydroxy (tosyloxy)iodo]benzene (HTIB, Koser's reagent) leads to novel tosyloxylation of aromatic ring, thereby offering a convenient synthesis of hitherto unknown 4-tosyloxy-2-substituted phenols.

Hypervalent iodine oxidation of phenol derivatives using a catalytic amount of 4-iodophenoxyacetic acid and Oxone® as a co-oxidant **pp 5833–5840**
Takayuki Yakura*, Masanori Omoto, Yû Yamauchi, Yuan Tian, Ayaka Ozono



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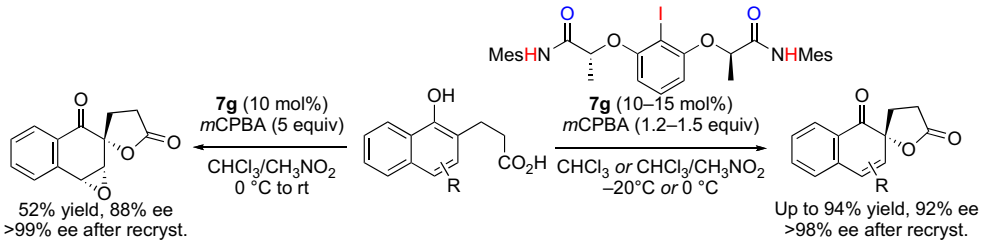
Muhammet Uyanik, Takeshi Yasui, Kazuaki Ishihara*



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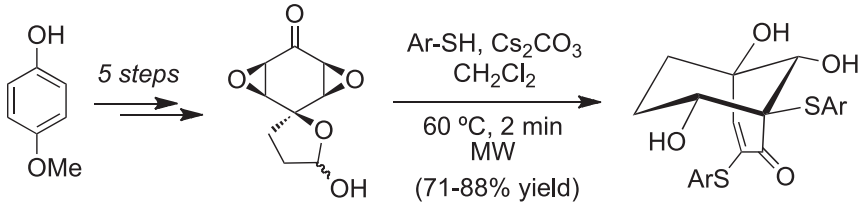
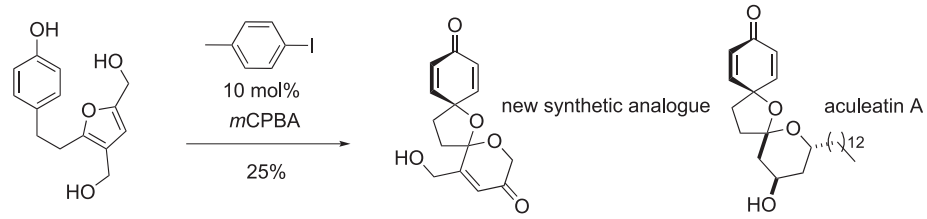


Hypervalent iodine(III)-mediated tandem oxidative reactions: application for the synthesis of bioactive polyspirocyclohexa-2,5-dienones **pp 5863–5872**
Mariam Traoré, Soumeth Ahmed-Ali, Marine Peuchmaur, Yung-Sing Wong*



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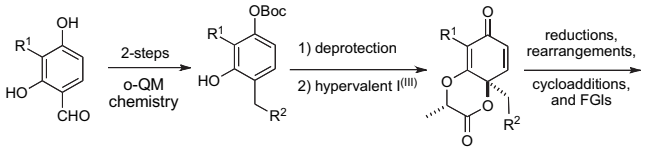
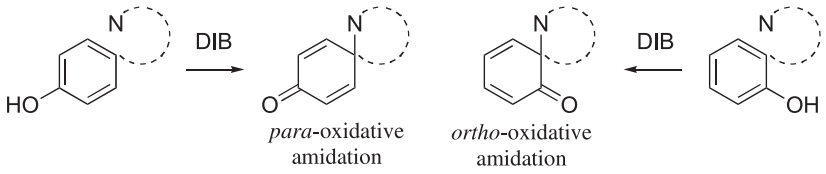
Todd A. Wenderski, Christophe Hoarau, Lupe Mejorado, Thomas R.R. Pettus*

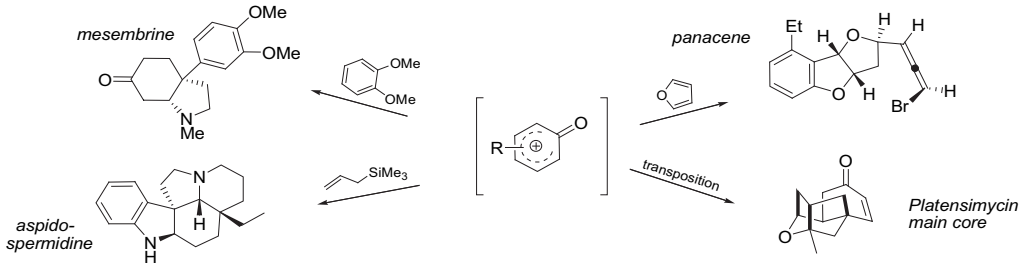


Synthetic aspects of the oxidative amidation of phenols **pp 5884–5892**
Huan Liang, Marco A. Ciufolini*

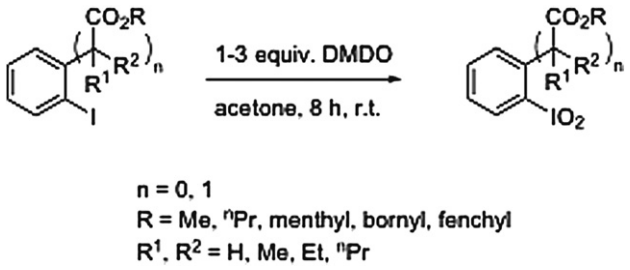


DIB = $PhI(OAc)_2$. The reaction may be carried out in the intra- or the intermolecular mode.

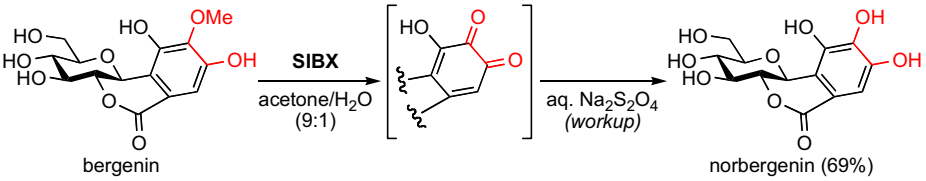
'Aromatic ring umpolung', a rapid access to the main core of several natural products **pp 5893–5901**
Kimiaka C. Guérard, Cyrille Sabot, Marc-André Beaulieu, Marc-André Giroux, Sylvain Canesi*



New chiral hypervalent iodine(V) compounds as stoichiometric oxidants **pp 5902–5907**
Sabine M. Altermann, Sascha Schäfer, Thomas Wirth*



Hypervalent iodine-mediated oxygenative phenol dearomatization reactions **pp 5908–5917**
Laurent Pouységu, Tahiri Sylla, Tony Garnier, Luis B. Rojas, Jaime Charris, Denis Deffieux, Stéphane Quideau*



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Supplementary data available via ScienceDirect

COVER

The chemistry of hypervalent iodine compounds today gathers interest from an ever growing number of chemists. In this issue, novel applications of hypervalent iodine compounds in organic synthesis and the synthesis of new hypervalent iodine reagents, including chiral variants, are described in a series of research articles and accounts by experts in the field. Cover figure designed by S. Quideau and T. Wirth

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