

Hypervalent Iodine Reagents in Organic Synthesis

The short course will provide a systematic description of the chemistry of organoiodine(III) and iodine(V) compounds with emphasis of their synthetic applications. The classification, general structural features, and preparation of (difluoroiodo)arenes, (dichloroiodo)arenes, iodosylarenes, [bis(acyloxy)iodo]arenes, aryl iodine(III) organosulfonates, iodonium salts, ylides, imidoiodanes, iodine heterocycles, and iodine(V) derivatives (IBX and its modifications) will be overviewed in the introductory part. The main part of the lecture will be devoted to the synthetic applications of these compounds, which are widely used as highly efficient and environmentally friendly reagents for various oxidative transformations of organic substrates. The final part of the lecture will be dedicated to synthetic applications of hypervalent iodine compounds as catalysts or recyclable reagents.