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[Lab. of Pharm. Synthetic Chemistry]

**Nature of Alkylidenecarbenes Generated from Alkenyl(phenyl)iodium  
Tetrafluoroborates via Base-Induced  $\alpha$ -Elimination.**

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Nature of alkylidenecarbene generated from alkenyl(phenyl)iodonium tetrafluoroborate was investigated in the addition reaction with olefins. 2-Methyl-1-propenylidene generated from 2-methyl-1-propenyl(phenyl)iodonium tetrafluoroborate with triethylamine was found to react with *cis*- and *trans*-4-methyl-2-pentene in CH<sub>2</sub>Cl<sub>2</sub> at 3 °C with complete stereoselectivity. Hammett study for the cycloaddition of the carbene, generated with Et<sub>3</sub>N and *t*-BuOK, with ring-substituted styrenes (*p*-MeO, *p*-Me, *p*-Cl) in CH<sub>2</sub>Cl<sub>2</sub> at 3 °C revealed small  $\rho$  values of -0.56 (Et<sub>3</sub>N) and -0.55 (*t*-BuOK). These evidences indicated the alkenyliodonium salt-derived alkylidenecarbenes to be mildly electrophilic and the free carbene rather than the carbenoid.

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[Lab. of Pharm. Synthetic Chemistry]

**Tetracyanoethylene-Hydrogen Peroxide,  
a Mild Epoxidation System of Olefins.**

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A reagent combination system, tetracyanoethylene-30% hydrogen peroxide, was found to epoxidize olefins efficiently in acetonitrile at room temperature in a stereospecific manner with retention of the configuration of the double bond.

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**Catalytic Activities of Dicyanoketene Acetals in Alcoholysis of Epoxides.**

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The catalytic activity of various types of captodative ethylenes has been investigated on alcoholysis of epoxides, and dicyanoketene dimethyl acetal (DCKDMA) and dicyanoketene ethylene acetal (DCKEA) are found to be efficient and mild catalysts.