Fluoroalkyl group transfer using phosphonates

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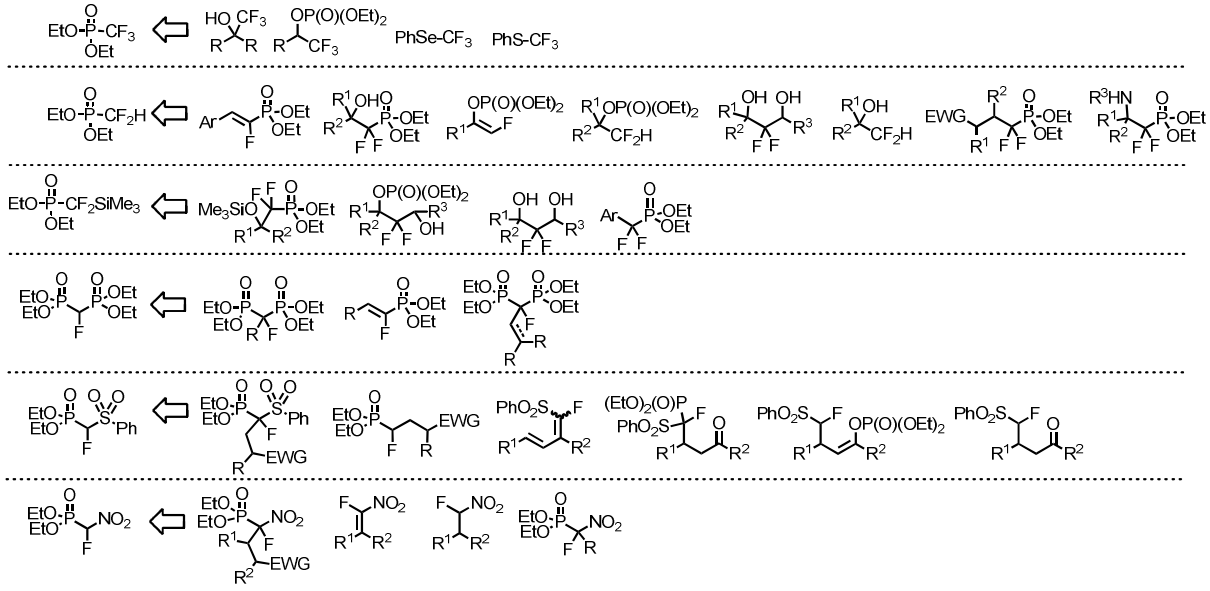
Many commercially important products including more than 20% of pharmaceuticals, 30-40% of agrochemicals, polymers, liquid crystals and advanced materials contain at least one fluorine atom in the molecule. Therefore, methods for selective and mild introduction of fluorinated atoms and fluorine-containing functional groups are in great demand.

Fluoroalkylation (i.e. introduction of (poly)fluoroalkyl groups) is the area of intensive study. We have developed novel methodologies for selective introduction of various fluoroalkyl groups such as trifluoromethyl, difluoromethyl, difluoromethylene, fluoromethyl, etc. groups using fluorinated phosphonates (Figure).[1-11]



Figure

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