

Photocatalyzed Perfluoroalkenylation - A synthetic application of ISC processes in organic chemistry

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The perfluoroalkylation of organic compounds has been under intense investigation during the last decade.

In particular photocatalytic approaches using visible light stand out because of their mild reaction conditions.

We report herein a mild and experimentally simple synthesis of (per)fluorinated enals in one step straight from the corresponding aldehydes.

Based on the formation and irradiation of electron donor-acceptor-complexes between phosphines and perfluoroiodoalkanes with blue light, an inter-system-crossing process appears to generate electrophilic perfluoroalkyl-radicals.