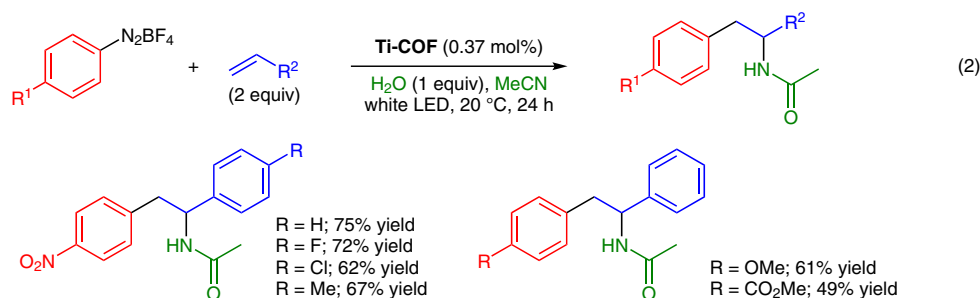
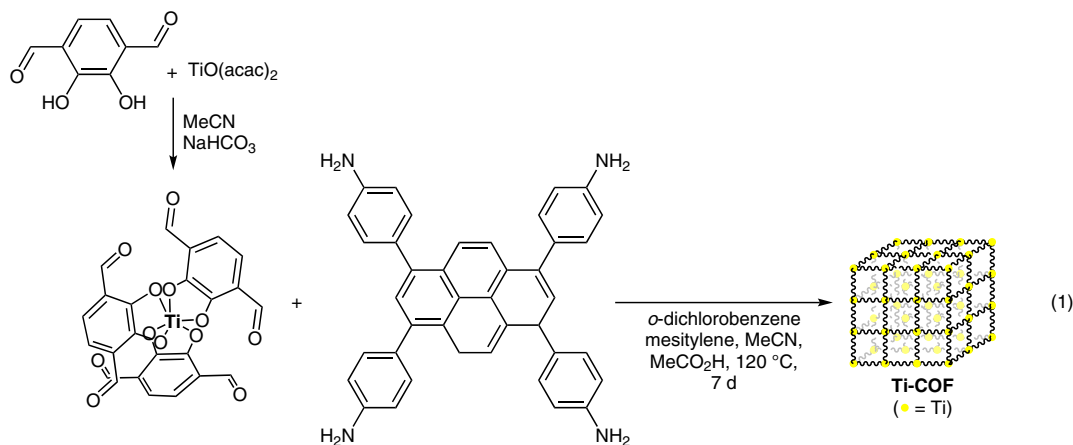


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A 3D Anionic Metal Covalent Organic Framework with soc Topology Built from an Octahedral  $Ti^{IV}$  Complex for Photocatalytic Reactions

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# Photochemical Meerwein Arylation By Using a Titanium(VI)-Based Covalent Organic Framework



**Significance:** A titanium (VI)-based three-dimensional covalent organic framework (**Ti-COF**), prepared according to Equation 1, catalyzed the Meerwein arylation of alkenes in MeCN–H<sub>2</sub>O under white LED irradiation to afford the corresponding Meerwein addition products in  $\leq 75\%$  yield (eq. 2).

**Comment:** The Ti-COF catalyst was characterized by means of FTIR, <sup>13</sup>C CP/MAS NMR, UV/Vis DRS, XPS, PXRD, TGA, N<sub>2</sub> adsorption/desorption isotherms, BET, SEM, TEM, HRTEM, STEM, EDX, and elemental analyses. In the Meerwein addition reaction of 4-nitrobenzenediazonium tetrafluoroborate and styrene, the catalyst was recovered and reused four times without significant loss of its catalytic activity.