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Photocatalytic Cascade Radical Cyclization Approach to Bioactive Indoline-Alkaloids over Donor-Acceptor Type Conjugated Microporous Polymer

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Photocatalytic 1,2-Formylarylation of N-Arylacrylamides

Selected results:

Significance: A carbazolic-cyano conjugated microporous polymer (CC-MNP), prepared according to equation 1, catalyzed the 1,2-formylarylation of N-arylacrylamides with 1,3-dioxolane in the presence of TBHP under irradiation by a 5 W blue LED to give the corresponding formyl-substituted oxindoles in ≤81% yield (eq. 2). CC-MNP also catalyzed a gram-scale synthesis of 2-(5-methoxy-1,3-dimethyl-2-oxoindolin-3-yl)acetaldehyde (76% yield, 1.77 q). **Comment:** CC-MNP was characterized by means of SEM, UV/Vis-NIR, FT-IR, and TGA analyses. In the 1,2-formylarylation of N-methyl-N-phenylmethacrylamide, the catalyst was reused four times with no significant loss of its catalytic activity (first run: 81% yield, fifth run: 75% yield).

SYNFACTS Contributors: Yasuhiro Uozumi, Ryoko Niimi Synfacts 2019, 15(09), 1035 Published online: 20.08.2019 **Polymer-Supported** Synthesis

Key words

photocatalysis formyloxindoles formylarylation arylacrylamides indoline alkaloids microporous polymers

