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# Tetrahedron Letters

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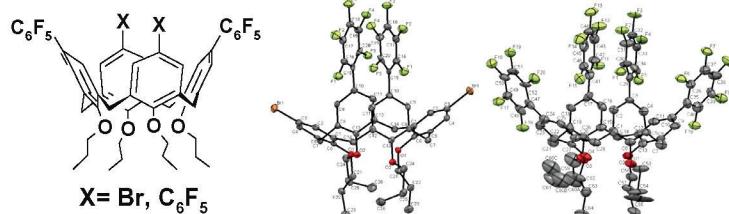
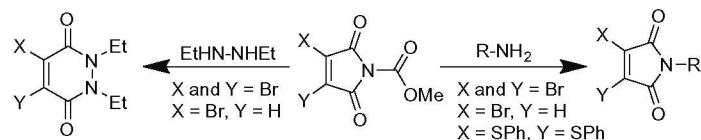
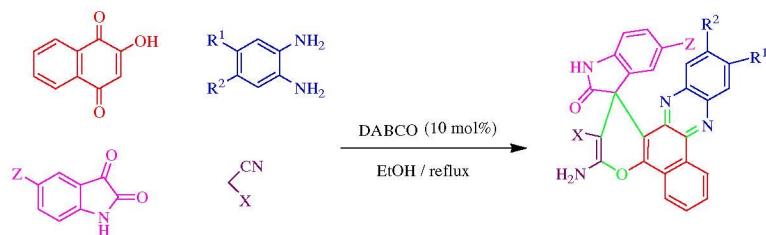


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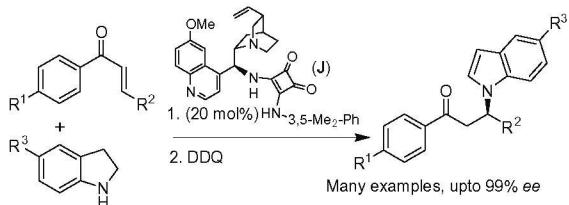
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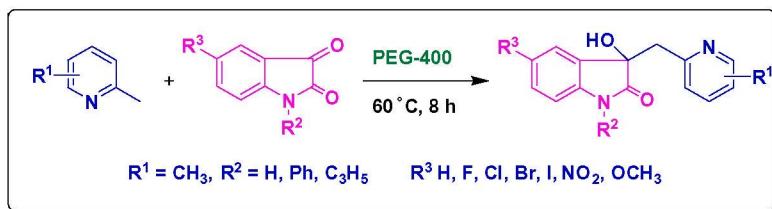
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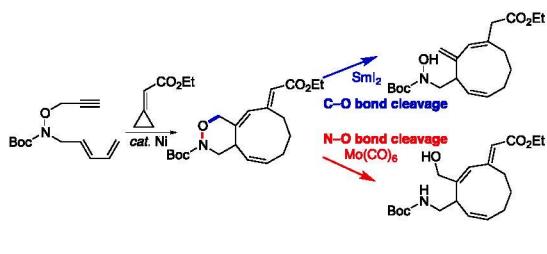
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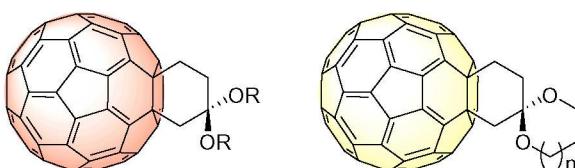
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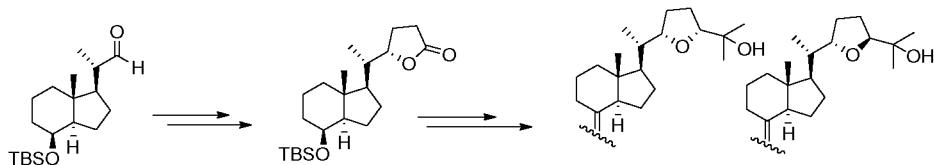
Acetalized [60]fullerenes were synthesized from cyclohexanone-fused [60]fullerene, which was facilely prepared by Diels–Alder reaction of  $C_{60}$  with silyl ether diene, on treatment of various aliphatic alcohols under  $TiCl_4$  catalyst. The spiro-cyclic acetalized [60]fullerenes having 5-, 6-, and 7-membered ring were also synthesized by using the corresponding diols under the same condition. The slightly raised reduction potentials  $E^{red}$  (~0.04 V) relative to that of PCBM were observed by cyclic voltammetry measurement, depending on the identity of alkyl group/group. The noncyclic acetalized [60]fullerenes showed lower thermal stability up to 200 °C, while the cyclic ones exhibited the drastically improved thermal stability up to 350 °C under nitrogen atmosphere. The acid-catalyzed hydrolysis easily removed the acetal moiety quantitatively, resulting in the considerable change of solvent solubility of the fullerene.



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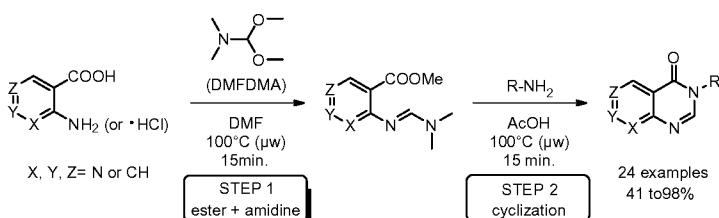
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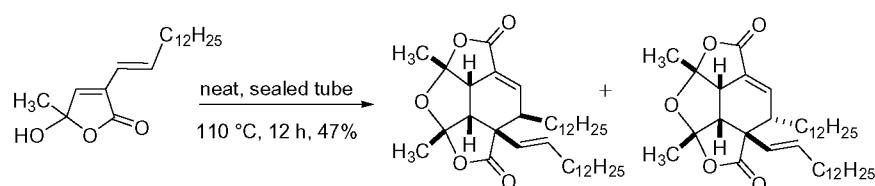
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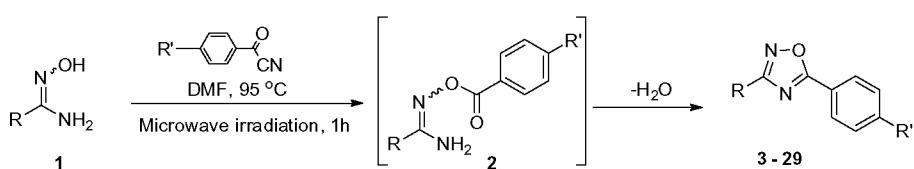
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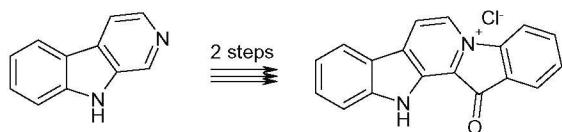
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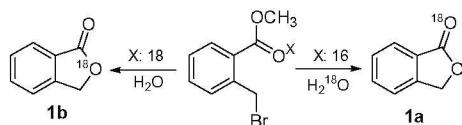
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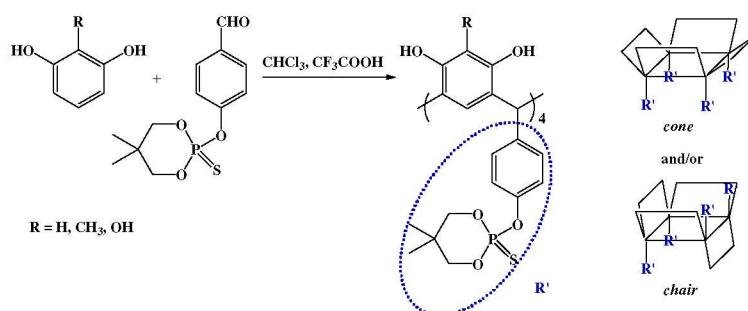
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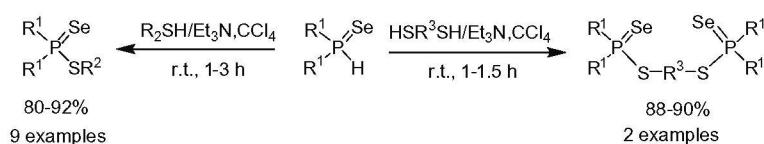
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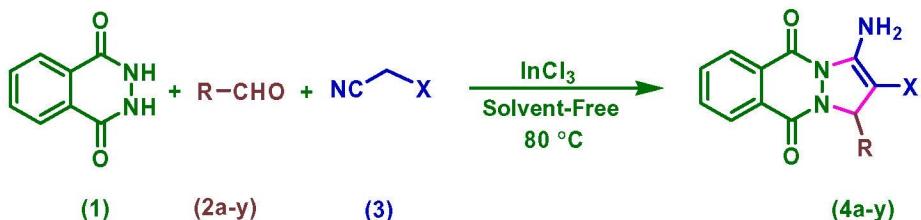
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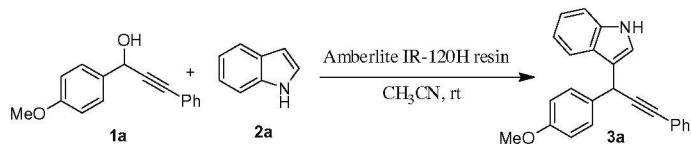
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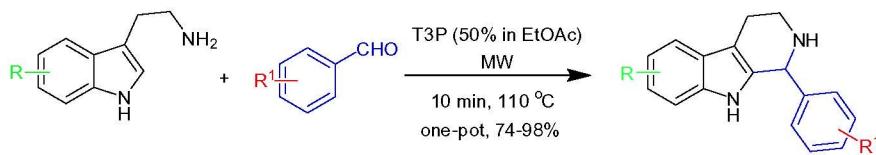
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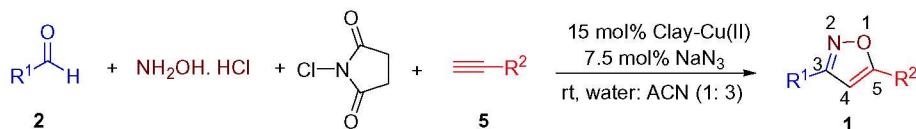
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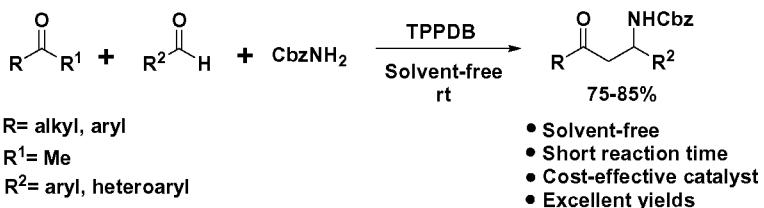
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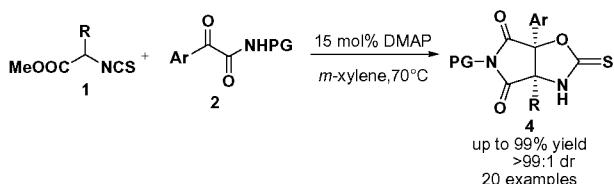
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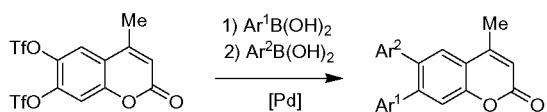
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\*Corresponding author

(i)+ Supplementary data available via SciVerse ScienceDirect

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