

萘并呋喃类化合物的染料化光氧化及其杂环衍生物的合成与表征

钱旭红,张玉兰

华东理工大学药物化工所

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摘要 萘并呋喃类化合物1、7在四苯基卟啉存在与氧低温反应给出相应的二氧杂环丁烷类产物2、8, 室温下分别全部分解成乙酰基乙酰氧基化合物4、9。2和盐酸作用可给出呋喃3-位甲基及所在萘半环β位的二氯代产物6。4与盐酸反应通过失去萘α位的酰基, 形成羟基呋喃化合物3, 1在三溴化硼酸解下亦可得同一产物。4在醋酸钠/酸酐中环生成3-乙酰基吡喃酮(5)。

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Syntheses and characterizations of the dye sensitized photooxygenation products and the heterocycles of naphthofuran derivatives

QIAN XUHONG,ZHANG YULAN

Abstract In the presence of tetraphenylporphine and oxygen under irradiation of light at low temperature, naphthofurans 1 and 7 formed the corresponding dioxetanes 2 and 8, and followed by decomposition at room temperature to acetylacetoxy naphthalene 4 and 9, respectively. 2 reacted with hydrogenchloride to give naphthofuran 6, in which two hydrogens at 3-methyl group and 9-position near the furan ring were substituted by chlorine group. 4 reacted with hydrogen chloride form hydroxy naphthofuran 3 by losing an acetyl group at its α -position, the same product was obtained by the action of 1 with BBr₃. In the presence of sodium acetate/acetic anhydride 4 cyclized to give 3-acetyl naphthopyrone 5. The structures of the above compounds were confirmed by using ¹H, ¹³C-NMR, IR, MS, UV, FL and elemental analysis, their synthetic mechanism were also suggested.

Key words [PHOTOOXIDATION](#) [NAPHTHALENE P](#) [FURAN P](#) [FURAN P](#) [CYCLOADDITION REACTION](#) [DYES](#) [ORGANIC SYNTHESIS](#) [SENSITIZATION](#) [HETEROCYCLIC COMPOUNDS](#) [PYRANONE P](#) [OXETANE](#) [PORPHYRIN](#) [COMPOUND CHARACTERIZATION](#)

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