

عنوان مقاله:

Metal-organic framework materials as nano photocatalyst

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نویسندگان:

A. Majedi - School of Chemistry, College of Science, University of Tehran, Tehran, Islamic Republic of Iran

F. Davar - Department of Chemistry, Isfahan University of Technology, Isfahan, ۸۴۱۵۶-۸۳۱۱۱, Islamic Republic of Iran

A. R. Abbasi - School of Chemistry, College of Science, University of Tehran, Tehran, Islamic Republic of Iran

خلاصه مقاله:

Photocatalytic degradation of toxic organic compound in water, soil and air by semiconductor catalysts such as TiO₂ and ZnO have received much attention over the last two decades. However, the low quantum yield, easy agglomeration and difficult post-separation of these inorganic catalysts limit their application for large-scale applications. Metal-organic frameworks (MOFs) are the latest class of ordered porous solids that being intensively studied as a novel class of hybrid inorganic-organic material with ultrahigh porosity, enormous internal surface areas, together with the extraordinary tailorability of structure, dimension, size and shape. Recently exploring performance of MOFs as a new nanophotocatalyst is attracting interest of researchers working on the fields of chemistry, chemical engineering, materials science and others. Although the photocatalytic application of MOF materials is still at the early stage compared with the other applications of them such as gas storage, separation, biomedical application and heterogeneous catalysis, the currently available results have demonstrated that the design and construction of MOFs for photocatalyst functionality is very active. The present review aims to introduce MOF materials, the synthesized methods and highlights the progress attempts for using them as a nanophotocatalyst for degradation of pollutants

کلمات کلیدی:

environment, Metal organic framework, Nano photocatalyst, Nanoporous materials, Organic dyes degradation

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