



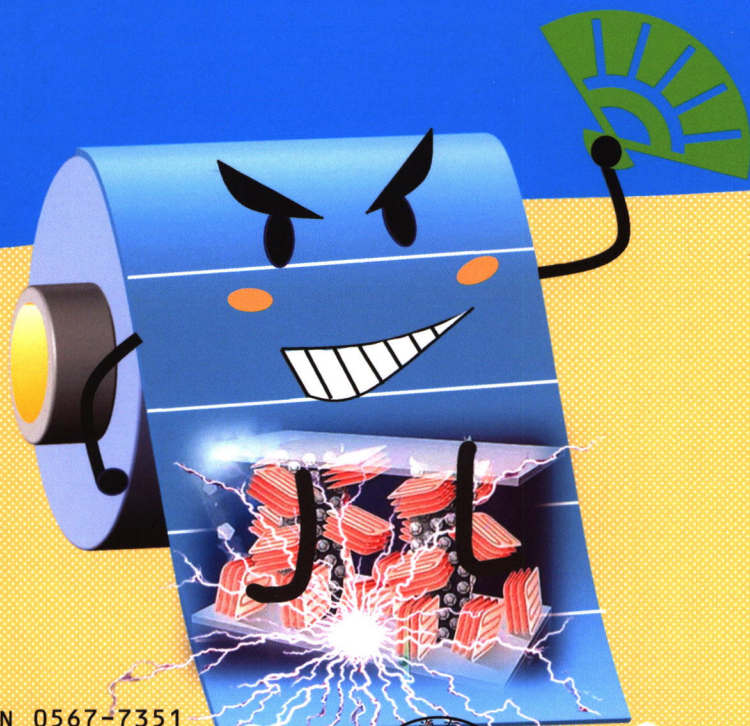
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研究论文

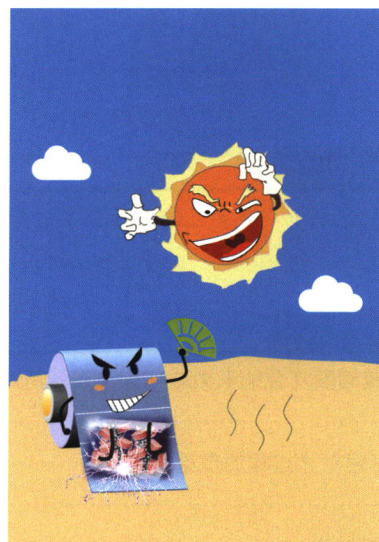
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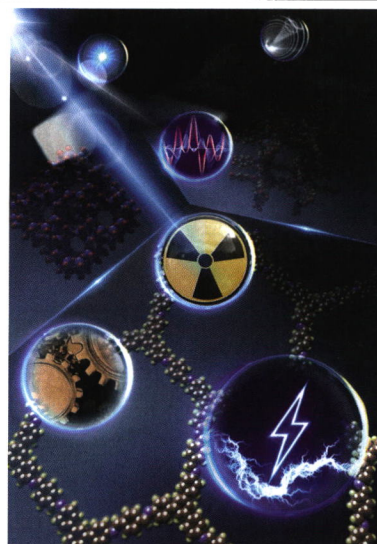
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* 通信联系人.

On the cover: Thermal stability is a roadblock on the road to commercialization of organic solar cells, and ternary doping of the active layer is certainly an effective strategy. [Yan, Lingpeng *et al.* on page 131-145.]

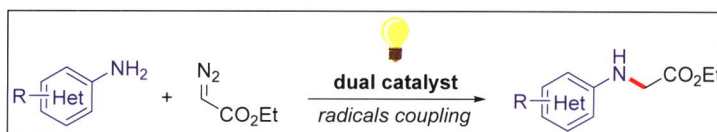


On the inside front cover: Zeolites, metal-organic frameworks (MOFs), and covalent organic frameworks (COFs) are the most representative crystalline porous materials. This review mainly focuses on the synthesis methodologies of crystalline porous materials and provides an overview of the various synthesis methods. [Wang, Shuao *et al.* on page 146-157.]



Communication

Visible-Light-Promoted *N*-Alkylation Reactions of (aza)Aromatic Amines with Ethyl Diazoacetate



Zhao, Yating; Liu, Fan; Wang, Qiu'an*; Xia, Wujiong*

Acta Chim. Sinica **2023**, *81*(2), 111-115

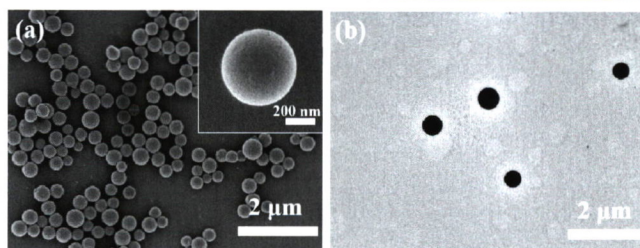
Visible-light-promoted *N*-alkylation reactions of (aza)aromatic amines with ethyl diazoacetate were reported herein. A series of α -amino acid derivatives were synthesized by the combination of photocatalyst and Lewis-acid catalyst. This method featured in mild reaction conditions, good functional group tolerance and wide range of substrate scope. Mechanism experiments indicated the reaction involved in alkyl radical intermediate that formed by the proton-coupled electron transfer (PCET) step between ethyl diazoacetate and excited photocatalyst. Radicals cross-coupling then occurred to produce the final *N*-alkylation products under the coordination of Lewis-acid.

Article

Preparation of the Protein/Polyphenylboronic Acid Nanospheres for Drug Loading and Unloading

Yin, Xueyang; Gu, Kai; Shao, Zhengzhong*

Acta Chim. Sinica **2023**, *81*(2), 116-123

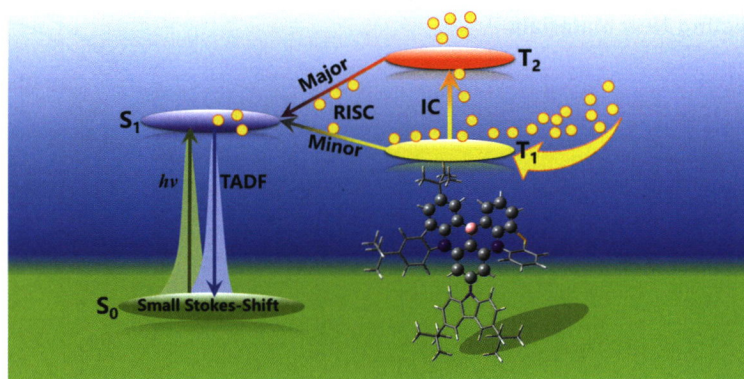


Silk protein/polyphenylboronic acid nanospheres of 540 nm in size with high drug loading and encapsulation rates were prepared by a simple and rapid method to achieve controlled drug release for about seven days and its slow release behavior was pH-responsive. It synergized with the main drug to improve its free radical scavenging rate and scavenging efficiency, which was superior to the direct drug delivery group.

Theoretical Study on the Multiple Resonance Thermally Activated Delayed Fluorescence Process

Zhang, Shaoqin; Li, Meiqing; Zhou, Zhongjun*; Qu, Zexing*

Acta Chim. Sinica **2023**, *81*(2), 124-130



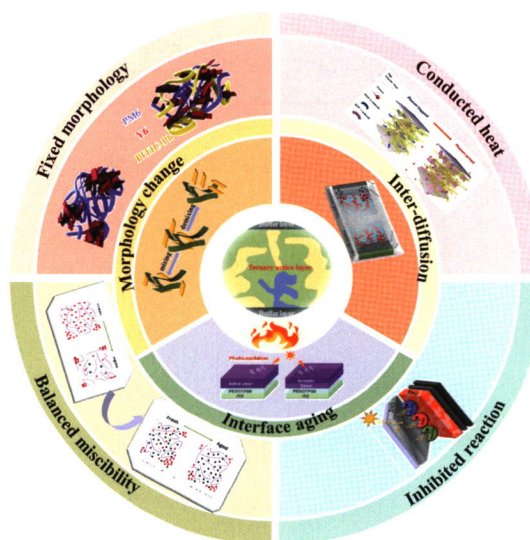
The highly triplet excited state T_2 is found to play an important role in the multiple resonance thermally activated delayed fluorescence (MR-TADF), and MR-TADF follows $T_1 \rightarrow T_2 \rightarrow S_1 \rightarrow S_0$ pathway.

Review

Research Progress of Thermal Failure Mechanism and Ternary Blending to Improve Thermal Stability of Organic Solar Cells

Zha, Han; Fang, Jin; Yan, Lingpeng*; Yang, Yongzhen*; Ma, Changqi*

Acta Chim. Sinica **2023**, *81*(2), 131-145

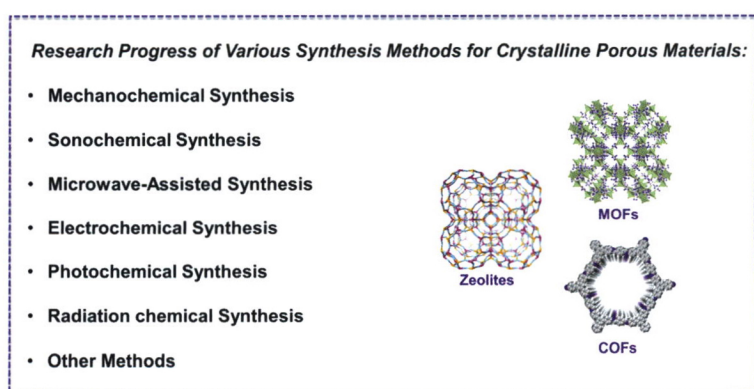


The mechanism of thermal degradation of organic solar cells (OSCs) is summarized in this review. On this basis, the progress of the application of ternary strategy in improving the thermal stability of OSCs and its mechanism of action are highlighted. Finally, the development of the application of ternary strategy in OSCs is prospected.

Research Progress of Synthesis Methods for Crystalline Porous Materials

Chen, Junchang; Zhang, Mingxing; Wang, Shuao*

Acta Chim. Sinica **2023**, *81*(2), 146-157

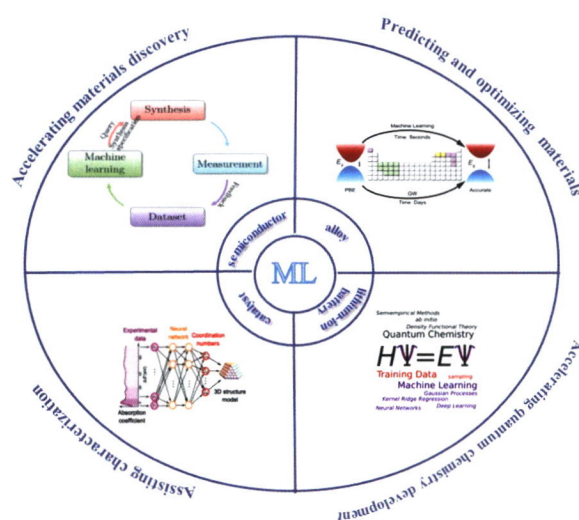


This review mainly focuses on the synthesis methodologies of crystalline porous materials and provides an overview of the various synthesis methods.

Recent Advance of Machine Learning in Selecting New Materials

Qi, Xingyi; Hu, Yaofeng; Wang, Ruoyu; Yang, Yaqing; Zhao, Yufei*

Acta Chim. Sinica **2023**, *81*(2), 158-174

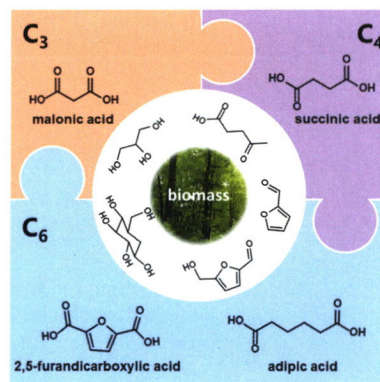


In this review, the basic process of machine learning and its application in materials science are summarized. This review focuses on the application of machine learning in different functions, as well as the performance prediction in the fields of catalyst materials, lithium-ion batteries, semiconductor materials and alloy materials, presenting the latest progress in materials development.

Directed Preparation of Biomass-based Polyester Monomers by Catalytic Conversion

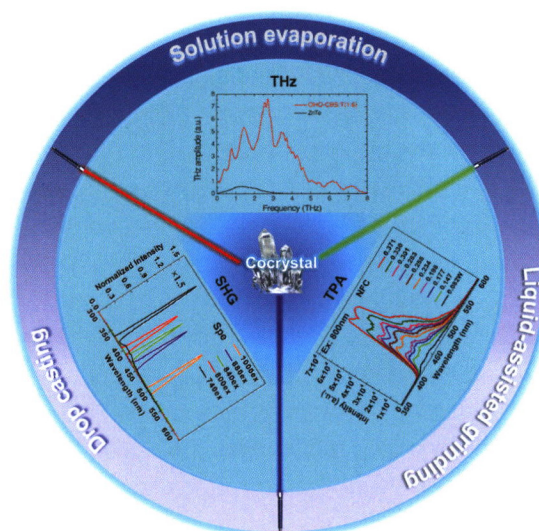
Yu, Luyao; Ren, Zhen; Yang, Yusen*; Wei, Min

Acta Chim. Sinica **2023**, *81*(2), 175-190



In this review, the catalytic systems for the preparation of C₃~C₆ dicarboxylic acid, including malonic acid, succinic acid, 2,5-furandicarboxylic acid and adipic acid, are reviewed from the aspects of biomass raw materials, catalyst performance evaluation and reaction mechanism, and the development of biomass dicarboxylic acid preparation are prospected.

Research Progress on Organic Co-crystals Nonlinear Optics Materials and Applications

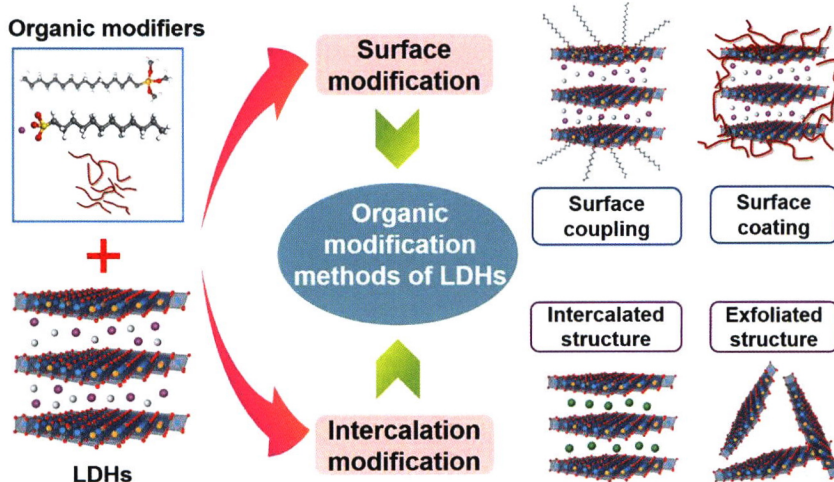


Hao, Liangmeng; Zhu, Weigang*

Acta Chim. Sinica **2023**, *81*(2), 191-206

Organic molecular cocrystals synthesized by the solution evaporation, drop casting and liquid-assisted grinding have been used in nonlinear optics such as two-photon absorption, second harmonic generation and terahertz wave.

Organic Modification of Layered Double Hydroxides and Its Applications



Yang, Na; Ma, Jianzhong*; Shi, Jiabo*; Guo, Xu

Acta Chim. Sinica **2023**, *81*(2), 207-216

The recent research progress in the organic modification methods of layered double hydroxides and their applications in the fields of flame retardancy, adsorption, catalysis, gas barrier, luminescence, energy storage and biomedicine are summarized in this review.

“《化学学报》2021 年度最有影响力论文奖”揭晓

为推动促进国内外化学期刊发展、加强化学工作者交流,根据《化学学报》编委会决议,设立“《化学学报》XX 年度最有影响力论文奖”。该奖对获奖人的国籍、居住地、单位、年龄等没有任何限制,由《化学学报》编委会根据文章年度 SCI 引用情况评出(参考影响因子计算规则,兼顾当年发表当年引用情况,按第 $n-2$ 年至第 n 年发表的文章在第 n 年引用情况排序),奖励通信作者荣誉证书、文章第一作者荣誉证书和奖金 1000 元。奖励 10 篇左右。已获奖的论文次年不再重复奖励。

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DOI: 10.6023/A20020027

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化学学报 2020, 78 (4), 299-310
DOI: 10.6023/A19110412

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