

应用化学

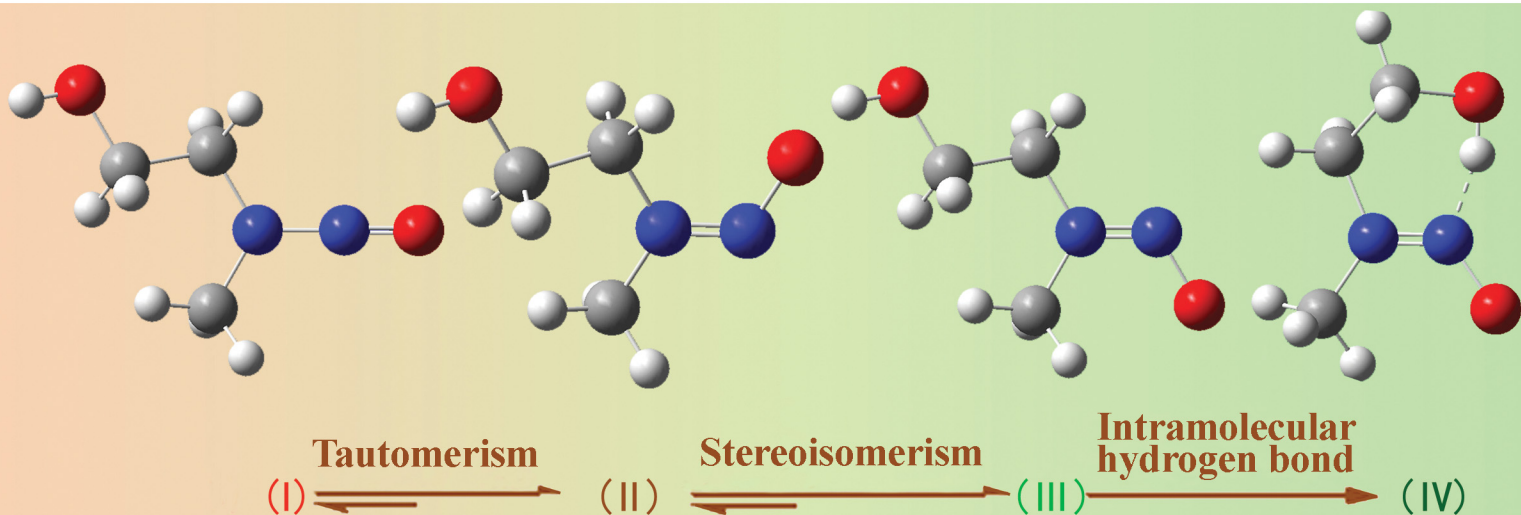
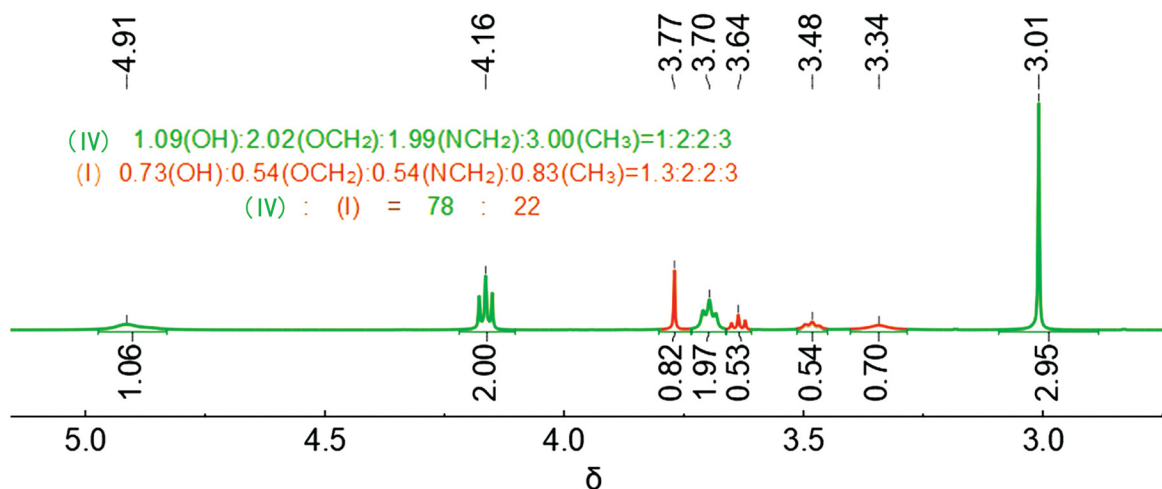
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It is identified that cyclic isomer by aid of intramolecular hydrogen bond is the dominant nitrosamine of methylethanolamine, by which it is verified that nitrosamines are easy to be formed in the following sequence: diethanolamine > methylethanolamine > monoethanolamine.



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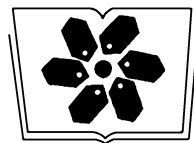


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应用化学

(YINGYONG HUAXUE)

第 36 卷 第 9 期 2019 年 9 月



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的次序为:二乙醇胺 > 甲基单乙醇胺 > 单乙醇胺。

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HU Xueyi, LUO Minmin, FANG Yun^{*}, LI Junguo, SUN Yang, LI Huashan

It is identified that cyclic isomer by aid of intramolecular hydrogen bond is the dominant nitrosamine of methylethanolamine, by which it is verified that nitrosamines are easy to be formed in the following sequence: diethanolamine > methylethanolamine > monoethanolamine.

For details see pp1061-1068

Review

Application Progress of Doping in Organic Field-Effect Transistors

QIU Yuming, JIANG Yihang, LU Guanghao^{*}

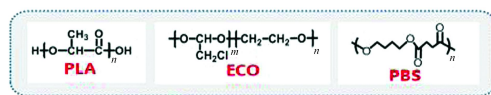
2019, 36(9):977-995

Full Papers

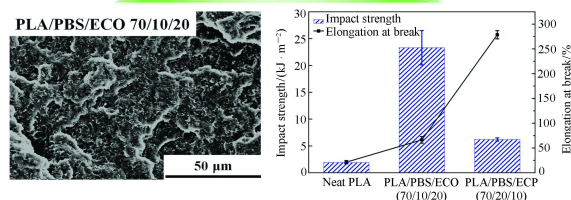
Synergetic Modification of Polybutylene Succinate and Poly(epichlorohydrin-co-ethylene oxide) Elastomer in Toughening Poly(lactic acid)

HU Kuan, JIANG Hai, HUANG Dong, LIU Chang^{*}, ZHANG Kunyu^{*}, PAN Li

2019, 36(9):996-1002



Multiphase Blend

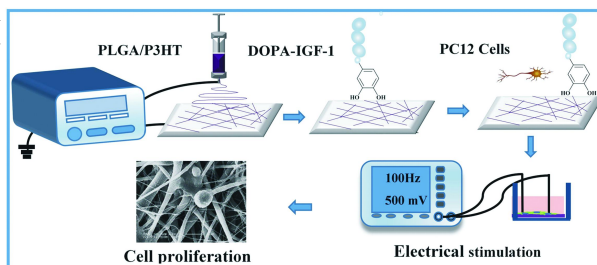


Toughening PLA by the synergistic effect of PBS and ECO obtains high performance biobased materials.

Preparation of Electroactive and Bioactive DOPA-Jointed Insulin-Like Growth Factor-1@ Poly(glycolide-lactide)/ Poly(3-hexylthiophene) Electrospinning Fiber and Its Application in Neural Tissue Engineering

ZHANG Shouyan, HU Jianglei^{*}, SHI Xincui^{*}, ZHANG Peibiao^{*}, ITO Yoshihiro

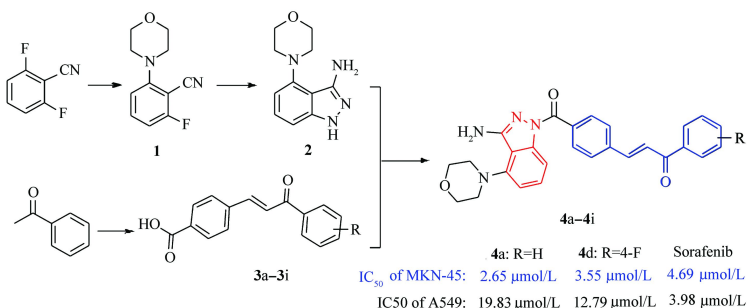
2019, 36(9):1003-1014



The growth factor is bound to electrospun PLGA/P3HT fibers by a gentle method to achieve the sustained action of IGF-1. In combination with electrical stimulation, electrical and biological activities have a synergistic effect on nerve growth.

Synthesis and Antiproliferative Activity of Novel Indazole-Chalcone Hybrids

GONG Yilin, SHI Jiantao, WANG Yang, CHEN Ye, DING Shi*, LIU Yang, LIU Ju*

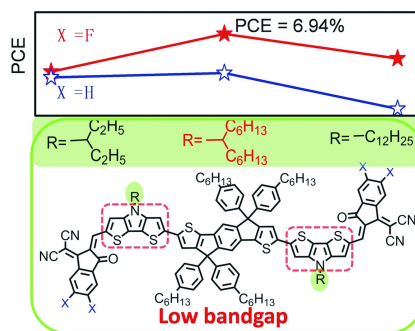


Nine indazole-chalcone hybrids have been synthesized and evaluated for antiproliferative activities against MKN45 and A549 cancer cell lines. Most of the compounds were found with potential antiproliferative activities.

2019, **36**(9) :1015-1022

Near-infrared Absorbing Non-fullerene Acceptors with Dithienopyrrole as π Spacer for Organic Solar Cells

ZHANG Xiaomei, LI Miaomiao*, WANG Qi, JIANG Yu, GENG Yanhou

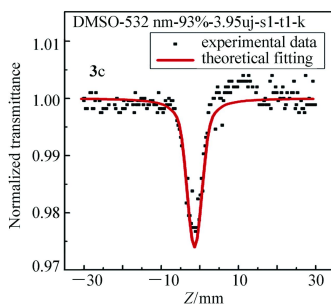


A series of non-fullerene acceptors with dithieno[3,2-b:2',3'-d]pyrrole (DTP) as π bridge was synthesized with low optical band gaps of 1.37–1.44 eV

2019, **36**(9) :1023-1034

Theoretical Investigation and Ultrafast Third-Order Nonlinear Optical Response of Novel Isomeric Pyrenyl Chalcones

SHI Yufang*, BAI Yang*, SUN Jinyu, LI Jun, ZHAO Minggen

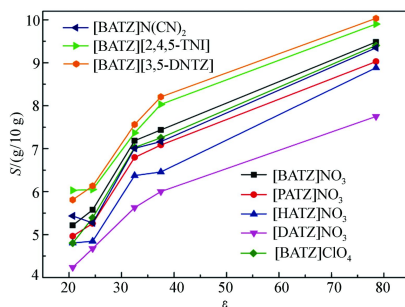


Compound **3c** has the highest unsaturated absorption coefficient in the three isomers. Theoretical calculation shows that compound **3c** has the highest static first hyperpolarizability.

2019, **36**(9) :1035-1043

Solubility Properties of 1-Alkyl-4-amino-1,2,4-triazolium Energetic Ionic Liquids

GAO Bo*, YANG Hongwei, TIAN Shaopeng, ZHAO Yuzhen, TIAN Tian*

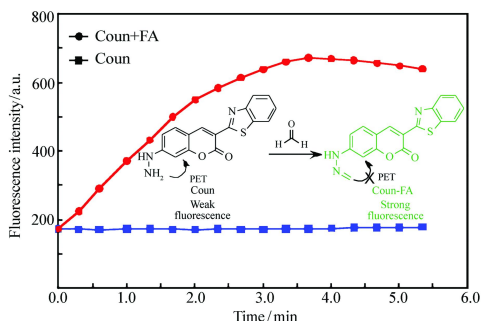


The solubility of eight kinds of ionic liquids increases as the dielectric constant of solvents increases, and [BATZ][3,5-DNTZ] possesses the highest dielectric constant value (ϵ : water 78.5, acetonitrile 37.5, methanol 32.5, ethanol 24.5, acetone 20.7) and has highest solubility in water.

2019, **36**(9) :1044-1052

A Coumarin-Based Fluorescent Probe for Rapid Detection of Endogenous Formaldehyde

GAO Man, HE Xin, CUI Jingnan*, LIU Tao, TIAN Zhenhao, HE Shengui

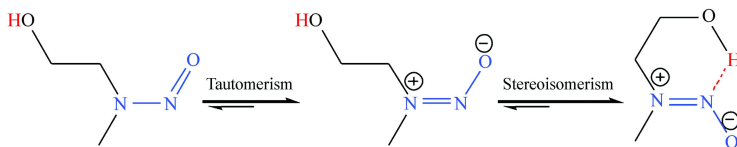


A fluorescent probe for rapid detection formaldehyde (FA) with a response time of 4 min was developed and its biological application was demonstrated.

2019, **36**(9):1053-1060

A Comparative Study on the Formation of Nitrosamines of Ethanolamines

HU Xueyi, LUO Minmin, FANG Yun*, LI Junguo, SUN Yang, LI Huashan

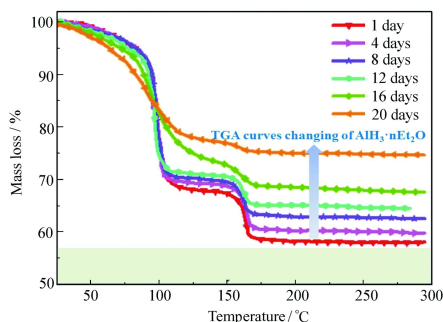


The dominant isomer of nitrosamines depends on tautomerism and stereoisomerism and intramolecular hydrogen bond.

2019, **36**(9):1061-1068

Stability of Aluminum Hydride Etherates and Its Solid-State Conversion to Alpha-Aluminum Hydride

ZHU Zhaoyang, JIANG Aifeng, XIA Debin, WANG Ping, LIN Kaifeng, FAN Jizhuang*, FAN Ruiqing, YANG Yulin*

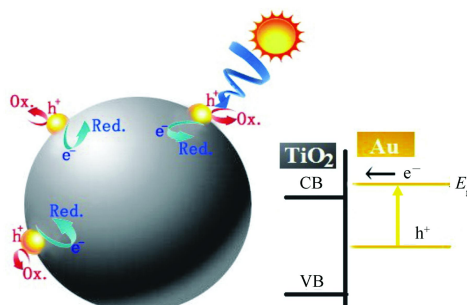


We first time report the storage of $\text{AlH}_3 \cdot n\text{Et}_2\text{O}$, together with its transformation to $\alpha\text{-AlH}_3$ under non-toxic solvent condition.

2019, **36**(9):1069-1075

One-Step Synthesis of $\text{TiO}_2\text{-Au}$ Composite and Its Performance for Photocatalytic Hydrogen Evolution

LIU Bing*, GONG Huili, LIU Rui, HU Changwen

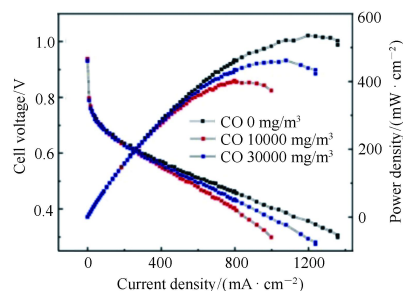
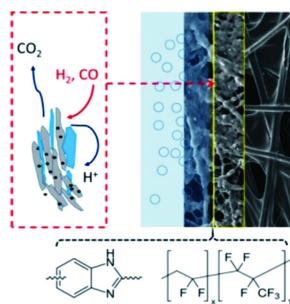


$\text{TiO}_2\text{-Au}$ nanocomposites synthesized by a one-step hydrothermal method relying on the redox reaction between $\text{Au}(\text{III})$ and $\text{Ti}(\text{IV})$ show good stability on hydrogen evolution under visible light.

2019, **36**(9):1076-1084

Multilayered Anode Catalytic Electrode in High-Temperature Proton Exchange Membrane Fuel Cell

LIU Shiwei, LIANG Liang, LI Chenyang, LIU Changpeng, XING Wei*, DONG Xiandui*

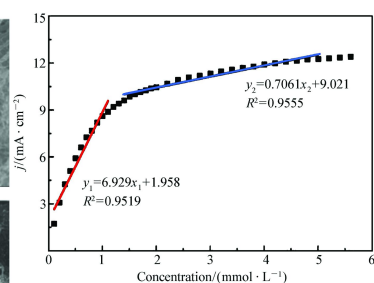
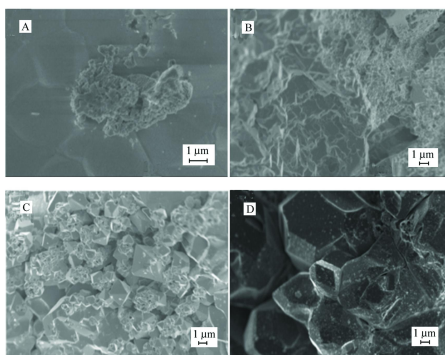


Multilayered catalytic electrode was designed to increase the catalyst utilization and improve anode catalytic activity of PBI based high temperature proton-exchange membrane fuel cell.

2019, **36**(9):1085-1090

Synthesis of Copper Modified Porous Nickel Self-supported Electrode and Its Catalytic Oxidation of Glucose

CHE Tinghua, TAN Xiao, YAN Jiawei, SONG Fengdan, ZHANG Hongmei, QI Suitao*



Cu₂O/Cu was evenly loaded on porous Ni surface with regular octahedron morphology. The self-supported electrode had a high sensitivity of 6929 μA/(mmol · L⁻¹ · cm²).

2019, **36**(9):1091-1098