In this issue

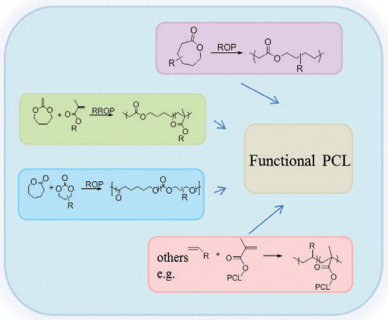
Tingting Chen, Tongjiang Cai, Qiao Jin and Jian Ji

Design and fabrication of functional polycaprolactone

DOI 10.1515/epoly-2014-0158
e-Polymers 2015; 15(1): 3–13

Review: This review presents the recent approaches to synthesize functional PCL, including homopolymerization of functional ε-CL, copolymerization of MDO with functional vinyl monomers, or copolymerization of ε-CL with functional carbonate monomers.

Keywords: ε-caprolactone; functional; MDO; PCL; ring-opening polymerization.



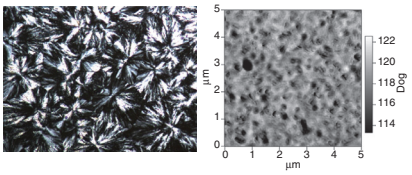
Song Luo, Xinyu Peng, Ying Chen, Ting Su, Jun Cao, Sai Li and Bin He

Synthesis, characterization, and crystallization of biodegradable poly(ε-caprolactone)-poly(L-lactide) diblock copolymers

DOI 10.1515/epoly-2014-0155
e-Polymers 2015; 15(1): 15–23

Full length article: Three PCL-PLLA diblock copolymers were prepared for crystallization behavior investigation. The spherulites of PCL in PCL6k-PLLA2k copolymer grew the fastest and phase separation was observed in PCL6k-PLLA6k copolymer film.

Keywords: biodegradable; crystallization; diblock copolymer; PCL-PLLA; spherulite.



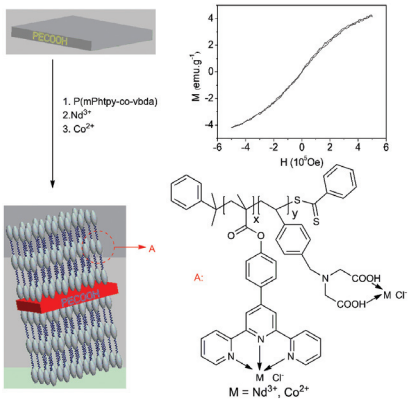
Jin Luo, Yanhua Wang, Rong Ren, Weilin Sun and Zhiquan Shen

Layer-by-layer self-assembly for controlled magnetic multilayer thin film fabrication

DOI 10.1515/epoly-2014-0131
e-Polymers 2015; 15(1): 25–32

Full length article: A simplified scheme of the layer-by-layer self-assembly process for the fabrication of the multilayer film (P(mPhtpy-co-vbda)/Nd^{3+}/Co^{2+})20×3 and its magnetic hysteresis loops is presented.

Keywords: bimetallic complexes; copolymer; layer-by-layer self-assembly; magnetic properties; multilayer film.



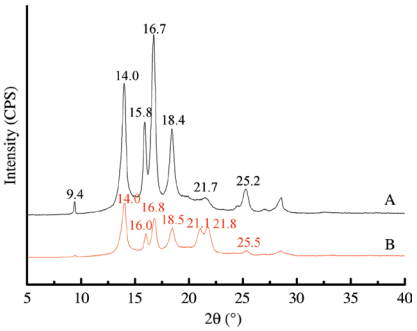
Liying Guo, Xiuyun Ma, Bin Zhang, Zhiming Wang and Pengcheng Huang

Synthesis of polyether imidazole ionic liquid and its modification on polypropylene crystal structure and mechanical properties

DOI 10.1515/epoly-2014-0128
e-Polymers 2015; 15(1): 33–37

Full length article: The figure shows that PIIL made the crystallization of the PP much easier and that PIIL has the effect of β-nucleation on the PP, which is beneficial to the mechanical properties.

Keywords: crystal structure; mechanical properties; modification; polyether imidazole ionic liquid; polypropylene.



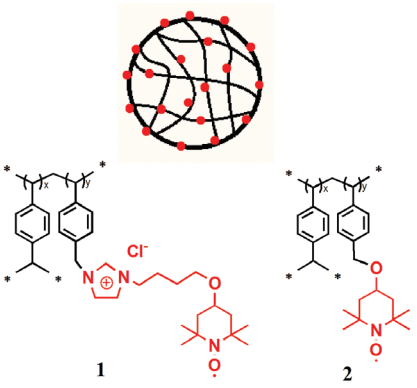
Danjie Li, Xianbo Shen, Liang Chen, Huanchang Jiang and Jianli Wang

The stability of covalently immobilization of TEMPO on the polymer surface through ionic liquid linkage: a comparative and model research

DOI 10.1515/epoly-2014-0027
e-Polymers 2015; 15(1): 39–44

Full length article: Ionic liquid-bridged, polymer bead-supported organic oxidants exhibited additional stability and durability.

Keywords: alcohols; heterogeneous catalyst; ionic liquid; recyclability; stability.



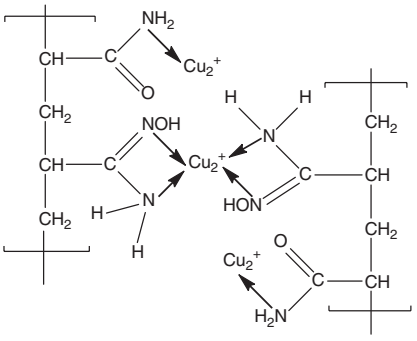
Siti Nurul Ain Md Jamil, Mastura Khairuddin and Rusli Daik

Preparation of acrylonitrile/acrylamide copolymer beads via a redox method and their adsorption properties after chemical modification

DOI 10.1515/epoly-2014-0109
e-Polymers 2015; 15(1): 45–54

Full length article: Amidoxime-modified poly(acrylonitrile(AN)-*co*-acrylamide(AM)) beads were prepared, and they were demonstrated to be an effective adsorbent for the removal of Cu(II) from aqueous solutions.

Keywords: amidoxime; chelate; chemical modification; copolymer; heavy metal ions; hydroxylamine hydrochloride; ligands; oxime group; polyacrylamide; polyacrylonitrile.



Xiaoping Zhan, Zhenmin Mao, Jian Chen and Yuankui Zhang

Acrylate copolymer: a rate-controlling membrane in the transdermal drug delivery system

DOI 10.1515/epoly-2014-0123
e-Polymers 2015; 15(1): 55–63

Full length article: The permeation behaviors of a new polyacrylate could be tailored by the components' contents and the membrane's thickness, which could be used as a rate-controlling membrane in transdermal drug delivery systems.

Keywords: drug delivery system; permeation; polyacrylate; rate-controlling membrane; transdermal.