

## In this issue

Fanni D. Sypaseuth, Emanuela Gallo, Serhat Çiftci and Bernhard Schartel  
**Poly(lactic acid) biocomposites: approaches to a completely green flame retarded polymer**

DOI 10.1515/epoly-2017-0024  
 e-Polymers 2017; 17(6): 449–462

**Full length article:** Basic routes towards green flame retarded PLA/kenaf biocomposites are discussed in this feasibility study. Multicomponent systems are proposed based on magnesium hydrate/synergist and synergistic ammonium polyphosphate/expandable graphite mixtures.

**Keywords:** biopolymers; composites; flame retardance; natural fibres; thermal decomposition.

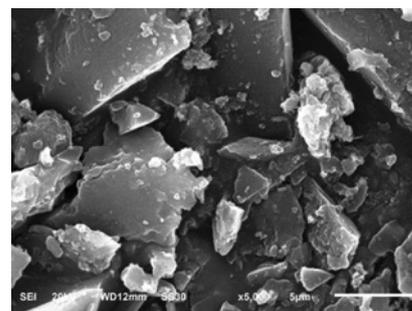


Yongqian Nie, Xuanxi Leng, Yixue Jiang, Shigan Chai, Jinzhi Zhang and Qichao Zou  
**Influence of reactive POSS and DDP on thermal stability and flame retardance of UPR nanocomposites**

DOI 10.1515/epoly-2016-0316  
 e-Polymers 2017; 17(6): 463–470

**Full length article:** DDP and PSS-POSS were both introduced into the molecular chain of UPR, the thermal stability and flame retardancy were investigated.

**Keywords:** [(6-oxide-6H-dibenz(c,e)(1,2)oxaphosphorin-6-yl)methyl]butanedioic (DDP); (2,3-propanediol)propoxy-heptaisobutyl substituted (POSS); flame retardance; thermal stability; unsaturated polyester resins (UPR).

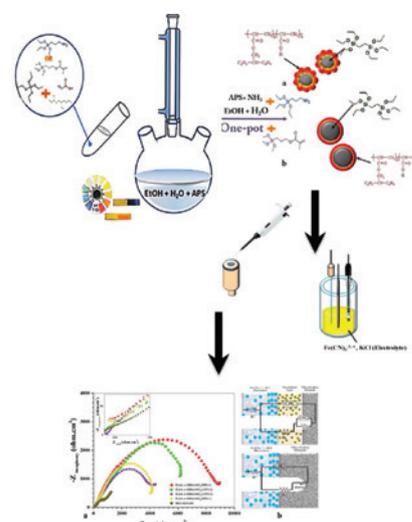


Maryam Mohammadpour Nazarabady and Gholamali Farzi  
**The effect of tunable morphology on the potential application of p(acrylic acid-co-2-ethylhexyl acrylate)/silica nanohybrids**

DOI 10.1515/epoly-2017-0041  
 e-Polymers 2017; 17(6): 471–480

**Full length article:** A one-pot route for the synthesis of hydrophilic polymer/silica nanocomposites in which the most effective parameters to confine the morphology (specific core-shell) of the resultant nanohybrids are successfully controlled. The tunable interesting properties of the nanohybrids are also assessed.

**Keywords:** electrochemical properties; hybrid nanoparticle; morphology; one-pot synthesis; p(acrylic acid co-2-ethylhexyl acrylate)/silica; UV-adsorption capacity.

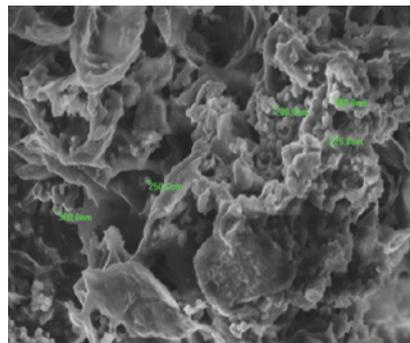


Leila Hasniou, Belkacem Nessark, Ahmed Madani and Kamal Lmimouni  
**Electrosynthesis and analysis of the electrochemical properties of a composite material: polyterthiophene+ titanium oxide**

DOI 10.1515/epoly-2017-0046  
 e-Polymers 2017; 17(6): 481–489

**Full length article:** A polyterthiophene-titanium oxide (P3T + TiO<sub>2</sub>) composite material was electrochemically synthesized in CH<sub>2</sub>Cl<sub>2</sub>/TBAP containing a monomer (terthiophene) and semiconductor (TiO<sub>2</sub>) nanoparticles.

**Keywords:** photocurrent; photoelectrochemical properties; polymer composite; polyterthiophene; titanium dioxide.

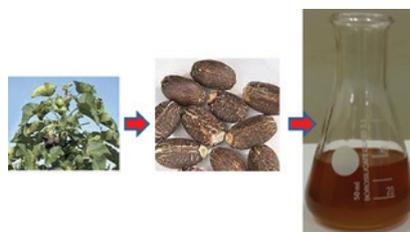


Manawwer Alam, Eram Sharmin, Naser M. Alandis and Naushad Ahmad  
**Effect of organoclay on structure, morphology, thermal behavior and coating performance of Jatropha oil based polyesteramide**

DOI 10.1515/epoly-2017-0096  
 e-Polymers 2017; 17(6): 491–500

**Full length article:** Jatropha oil is an inedible oil mainly used in biodiesel. We have attempted to prepare a Jatropha oil based polyesteramide/ clay composite, by one-pot, two-step reaction, for its application as a protective coating.

**Keywords:** coatings; composite; clay; Jatropha oil; polyesteramide.

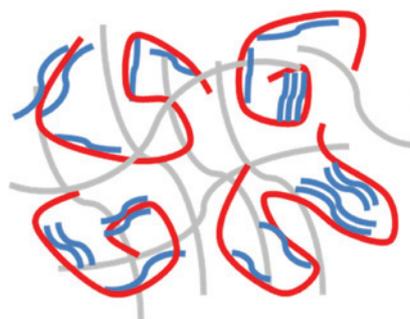


Soo-Kwan Kim, Jun-Hyun Mo, Jae-Yeop Kim and Kwang-Suk Jang  
**Improving the thermoelectric power factor of PEDOT:PSS films by a simple two-step post-treatment method**

DOI 10.1515/epoly-2017-0098  
 e-Polymers 2017; 17(6): 501–506

**Full length article:** Thermoelectric power factors of the low-cost PEDOT:PSS films could be improved effectively by the simple two-step post-treatment method.

**Keywords:** conjugated polymer; organic thermoelectric; PEDOT:PSS; post-treatment; power factor.

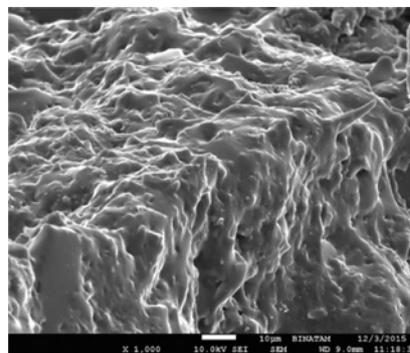


Abubakar Hamisu and Sevim Ü. Çelik  
**Poly(AN-co-PEGMA)/hBN/NaClO<sub>4</sub> composite electrolytes for sodium ion battery**

<https://doi.org/10.1515/epoly-2017-0022>  
 e-Polymers 2017; 17(6): 507–515

**Full length article:** Synthesis, thermal, morphological, and sodium ion conducting properties of new polymer composite electrolyte based on acrylonitrile and polyethylene glycol methacrylate copolymer [poly(AN-co-PEGMA)] were carried out in this work.

**Keywords:** copolymer; hexagonal boron nitride; NaClO<sub>4</sub>; Na-ion conductivity; polymer nanocomposite; sodium ion battery.

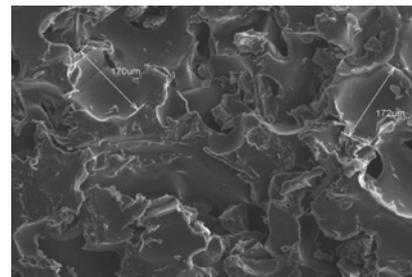


Mukesh Kumar and Raminder Kaur  
**Glass fiber reinforced rigid polyurethane foam: synthesis and characterization**

<https://doi.org/10.1515/epoly-2017-0072>

e-Polymers 2017; 17(6): 517–521

**Full length article:** The present study emphasizes on the reinforcement of rigid polyurethane foam by the addition of glass fibers for diverse engineering applications. In contrast to the conventional rigid polyurethane foam (RPUF), the foam developed in this case is castor oil based.



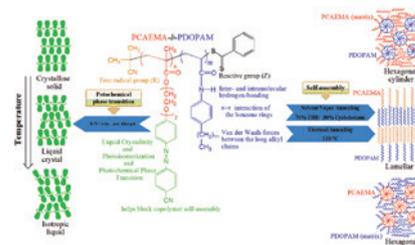
**Keywords:** castor oil; glass fibers; mechanical properties; reinforcement; rigid polyurethane foam.

Athmen Zenati and Yang-Kyoo Han  
**Synthesis and characteristics of novel azo-based diblock copolymers and their self-assembly behavior via solvents and thermal annealing**

DOI 10.1515/epoly-2017-0042

e-Polymers 2017; 17(6): 523–535

**Full length article:** Novel azo-based diblock copolymers with great control over their architecture, molecular weight and volume fractions of blocks, generate lamellar and hexagonal-type nanostructures and produce smectic phases with batonnet textures and nematic phases with threaded textures. The polymers show great promise and suitable properties for a wide range of applications such as optics, LCD, optical data storage media and lithography.



**Keywords:** azobenzene moiety; azo diblock copolymers; phase transitions; photoresponsive property; self-assembly.