In this issue

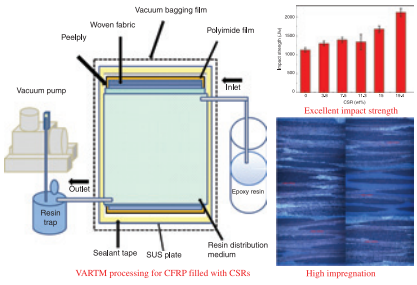
Hyeongcheol Park, Hana Jung, Jaesang Yu, Min Park and Seong Yun Kim

Carbon fiber-reinforced plastics based on epoxy resin toughened with core shell rubber impact modifiers

DOI 10.1515/epoly-2015-0068
e-Polymers 2015; 15(6): 369–375

Full length article: Core shell rubbers (CSRs) were selected as an impact modifier, and carbon fiber-reinforced plastics (CFRPs) incorporated with CSRs were fabricated using the vacuum-assisted resin transfer molding process. The impact strength of the CFRPs was improved by up to 87.5%, depending on the increase in CSR content, but their tensile properties were not reduced.

Keywords: carbon fiber-reinforced plastic; core shell rubber; impact strength; tensile strength; vacuum assisted resin transfer molding.



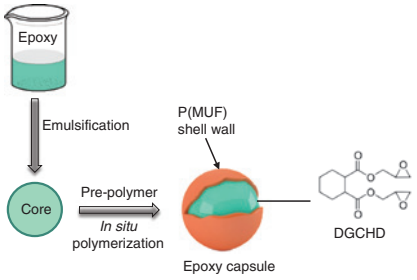
Hai-Ping Wang, Meng-Qiang Li, Chang Guo and Si-Qian Hu

Microencapsulation of diglycidyl 1,2-cyclohexanedicarboxylate by *in situ* polymerization: preparation and characterization

DOI 10.1515/epoly-2015-0027
e-Polymers 2015; 15(6): 377–383

Full length article: A glycidyl ester-type epoxy resin, diglycidyl 1,2-cyclohexanedicarboxylate (DGCHD), was microencapsulated by using *in situ* polymerization with poly(melamine-urea-formaldehyde) as a shell material.

Keywords: diglycidyl 1,2-cyclohexanedicarboxylate; encapsulation; epoxy resin; microcapsule; poly(melamine-urea-formaldehyde) (PMUF).



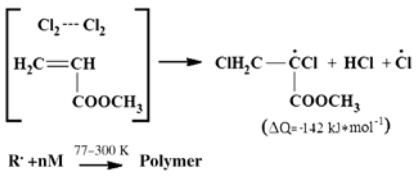
Dilyara Gordon and Alfa Mikhaylov

Reactions taking place during molecular chlorine impact on monomers in a wide range of temperatures

DOI 10.1515/epoly-2015-0059
e-Polymers 2015; 15(6): 385–391

Full length article: Usually, to produce free radicals, it is necessary to apply external energy to the system. In the present work, free radicals were produced by simple mixing of some monomers with molecular chlorine at low temperatures. In the course of these mixtures, heating polymerization reaction, initiated by the produced radicals, takes place.

Keywords: free radicals; low-temperature chemistry; oligomerization; polymerization.



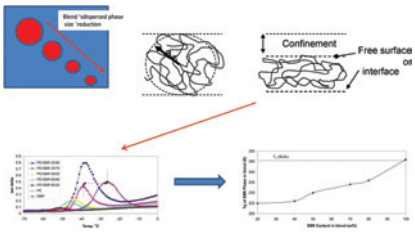
Ali Akbar Yousefi

Composition-dependent depression of the glass transition temperature of the rubber phase in a PE-SBR blend

DOI 10.1515/epoly-2015-0063
e-Polymers 2015; 15(6): 393–399

Full length article: Morphological observations are not necessary in determining the size of inclusions in polymer blends as Dynamic mechanical measurements can determine the domain size by detecting the T_g depression of the dispersed phase.

Keywords: blend; dispersed-phase domain size; glass transition; polyethylene; styrene butadiene rubber; thermoplastic elastomer.



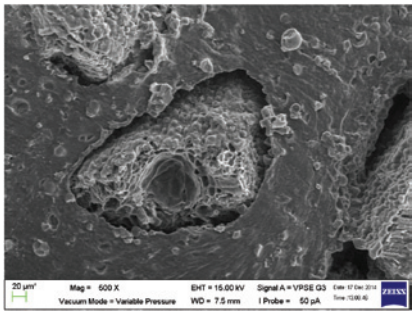
Jammy Rodney, Japar Sahari, Mohd Shah Mohd Kamal and Salit Mohd Sapuan

Thermochemical and mechanical properties of tea tree (*Melaleuca alternifolia*) fibre-reinforced tapioca starch composites

DOI 10.1515/epoly-2015-0074
e-Polymers 2015; 15(6): 401–409

Full length article: This paper presents some alternatives for making packaging materials from natural fibre-reinforced biocomposites.

Keywords: biocomposite; filler; *Melaleuca alternifolia*; natural fibre; reinforcement.



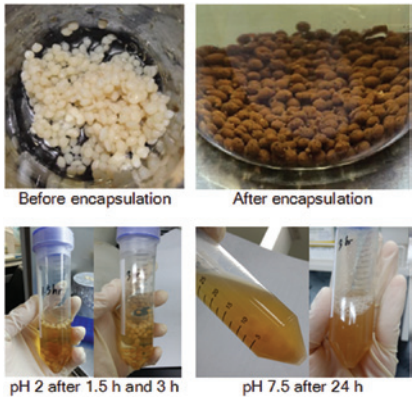
Pei Xin Chia, Ly Jun Tan, Caroline May Ying Huang, Eric Wei Chiang Chan and Stephenie Yoke Wei Wong

Hydrogel beads from sugar cane bagasse and palm kernel cake, and the viability of encapsulated *Lactobacillus acidophilus*

DOI 10.1515/epoly-2015-0133
e-Polymers 2015; 15(6): 411–418

Full length article: When used for encapsulation of probiotics, SCB and PKC hydrogel beads (left) protected *L. acidophilus* under simulated pH conditions of the stomach (middle) but not of the colon (right).

Keywords: carboxymethyl cellulose; encapsulation; gastrointestinal conditions; probiotic bacteria.



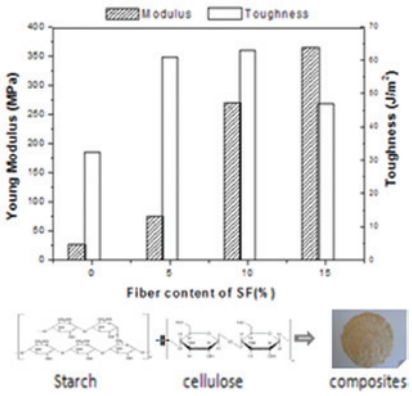
Hayet Latifa Boudjema and
Hayet Bendaikha

Composite materials derived from biodegradable starch polymer and *Atriplex halimus* fibers

DOI 10.1515/epoly-2015-0118
e-Polymers 2015; 15(6): 419–426

Full length article: New eco-friendly composites reinforced by *Atriplex halimus* fibers showed an increased mechanical and thermal resistance along with decreased water uptake. Totally biodegradable, they are an alternative material to conventional plastics.

Keywords: biodegradability; cellulose fibers; mechanical properties; thermal properties; thermoplastic starch.



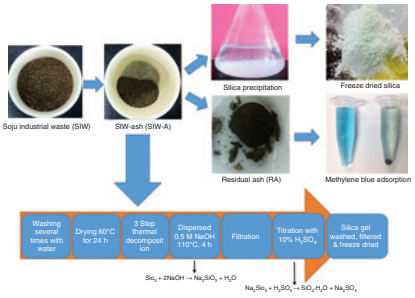
Arun Naidu Bhima, Jung-Hee Park, Min Cho, Young-Joo Yi, Sae-Gang Oh, Yool-Jin Park, Nanh Lovanh, Seralathan Kamala-Kannan and Byung-Taek Oh

Simultaneous utilization of soju industrial waste for silica production and its residue ash as effective cationic dye adsorbent

DOI 10.1515/epoly-2015-0108
e-Polymers 2015; 15(6): 427–437

Full length article: Maximizing solid waste valorization renders the industrial use of soju more sustainable. Namely extraction of silica and use of residual ash as effective adsorbent for dyes from aqueous solutions offer potential in this context.

Keywords: adsorption; isotherms; kinetic models; methylene blue; nanosilica; soju industrial waste.



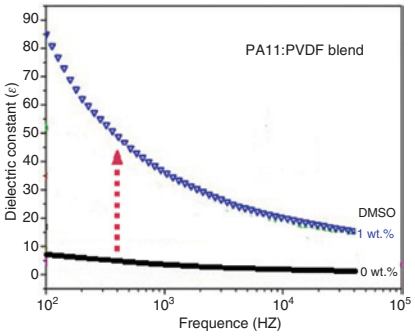
Rui Li, Bin Xue and Jianzhong Pei

Enhancement of the dielectric performance of PA11/PVDF blends by a solution method with dimethyl sulfoxide

DOI 10.1515/epoly-2015-0131
e-Polymers 2015; 15(6): 439–445

Full length article: The solution method was used to prepare polyamide 11/poly(vinylidene fluoride) blend films. This method is more propitious in forming β crystals since it improves the dielectric properties for a capacitor.

Keywords: dielectric properties; DMSO; PA11/PVDF; polymer blend; solution method.



Fengguo Liu, Ying Wang, Xiangxin Xue and He Yang

Temperature dependence of the viscosity of epoxy acrylate-tripropylene glycol diacrylate binary mixtures

DOI 10.1515/epoly-2015-0064
e-Polymers 2015; 15(6): 447–450

Communication: The temperature dependence of the viscosity of epoxy acrylate-tripropylene glycol diacrylate binary mixtures was studied at temperatures between 298.15 and 313.15 K.

Keywords: Andrade equation; epoxy acrylate; temperature dependence; UV-curable coatings; viscosity.