**Polymer Vol. 51, No. 22, 15 October 2010****Contents****EDITORIAL****Virtual special issue on nanocomposites dedicated to Donald R. Paul**

pp 5003–5004

G. Krausch, C.C. Han and S.Z.D Cheng

TRIBUTE**Dedication of the virtual special issue of Polymer on nanocomposites in celebration of the 70th birthday of Professor Donald R. Paul**

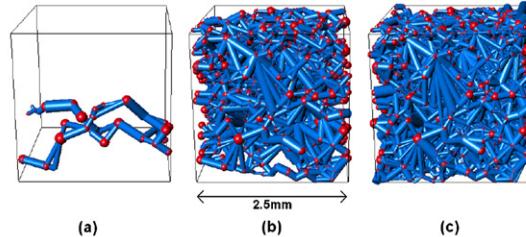
pp 5005–5006

Benny D. Freeman

FEATURE ARTICLE**Non-Newtonian flow in porous media**

pp 5007–5023

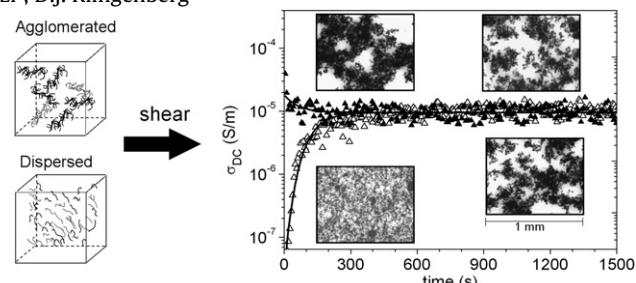
Taha Sochi

University College London, Department of Physics & Astronomy, Gower Street,
London WC1E 6BT, United Kingdom

The unblocked elements of the sand pack network for a Bingham fluid at various stages of yield. The fraction of these elements is (a) 0.4% (b) 25% and (c) 69%.

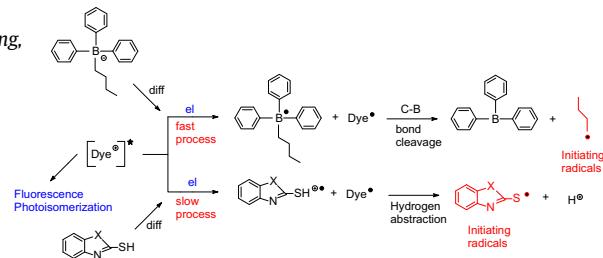
POLYMER COMMUNICATION**Shear-controlled electrical conductivity of carbon nanotubes networks suspended in low and high molecular weight liquids**

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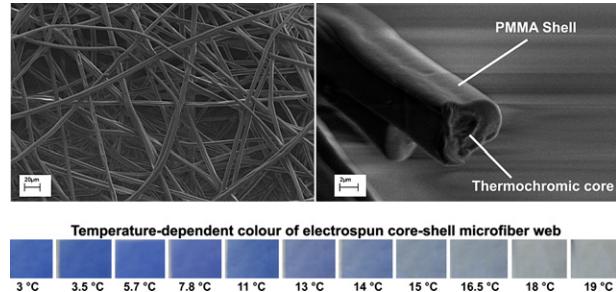
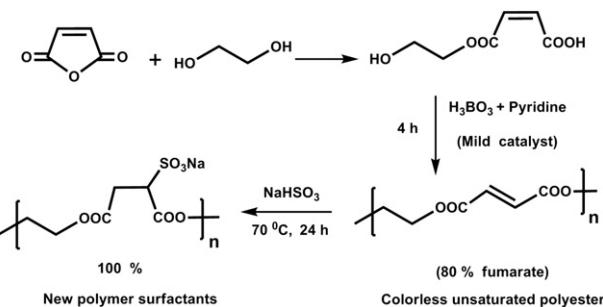
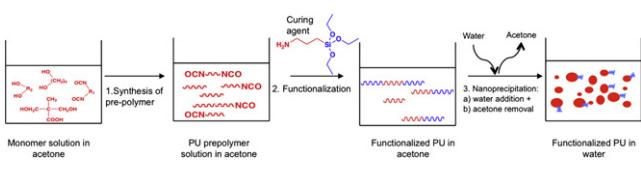
W. Bauhofer^{a,*}, S.C. Schulz^a, A.E. Eken^a, T. Skipa^b, D. Lellinger^b, I. Alig^b, E.J. Tozzi^c, D.J. Klingenberg^d^a Institute of Optical and Microelectronic Materials, Hamburg University of Technology,
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Germany^c Department of Chemical Engineering and Materials Science, University of California,
Davis, CA 95616, USA^d Department of Chemical and Biological Engineering, Univ. of Wisconsin, Madison,
1415 Engineering Drive, WI 53706, USA

POLYMER PAPERS**High speed three-component photoinitiating systems composed of cyanine dyes borate salt and heteroaromatic thiols pp 5028–5036**

Janina Kabatc

University of Technology and Life Sciences, Faculty of Chemical Technology and Engineering,
Semenyaryna 3, 85-326 Bydgoszcz, Poland**Reversibly thermochromic micro-fibres by coaxial electrospinning pp 5037–5043**

Ilana Malherbe, Ron D. Sanderson, Eugene Smit*

Department of Chemistry and Polymer Science, University of Stellenbosch, Private Bag X1,
Matieland, 7602, South Africa**Preparation of unsaturated polyesters using boric acid as mild catalyst and their sulfonated derivatives as new family of degradable polymer surfactants pp 5044–5050**Neslihan Alemdar^a, A. Tuncer Erciyes^a, Niyazi Bicak^{b,*}^a Istanbul Technical University, Chemical Eng. Dept. Maslak, 34469 Istanbul, Turkey^b Istanbul Technical University, Dept. of Chemistry, Maslak, 34469 Istanbul, Turkey**Synthesis of room temperature self-curable waterborne hybrid polyurethanes functionalized with (3-aminopropyl) triethoxysilane (APTES) pp 5051–5057**H. Sardon^{a,b}, L. Irusta^a, M.J. Fernández-Berridi^{a,*}, M. Lansalot^b, E. Bourgeat-Lami^b^a Departamento de Ciencia y Tecnología de Polímeros e Instituto de Materiales Poliméricos (POLYMAT), Facultad de Química UPV/EHU, 20018 San Sebastián, Spain^b Université de Lyon, Univ. Lyon 1, CPE Lyon, CNRS UMR 5265, Laboratoire de Chimie, Catalyse, Polymères et Procédés (C2P2), LCPP group, 43 Bd. du 11 Novembre 1918, F-69616, Villeurbanne, France

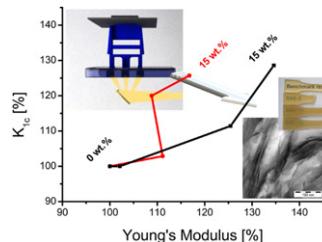
Novel acrylic nanocomposites containing in-situ formed calcium phosphate/layered silicate hybrid nanoparticles for photochemical rapid prototyping, rapid tooling and rapid manufacturing processes pp 5058–5070

Matthias Gurr^{a,b}, Yi Thomann^a, Michael Nedelcu^a, Rainer Kübler^b, Laszlo Könczöl^b, Rolf Mülhaupt^{a,c,*}

^a Institut für Makromolekulare Chemie und Freiburger Materialforschungszentrum der Albert-Ludwigs-Universität, Stefan-Meier-Straße 21/31, D-79104 Freiburg i. Br., Germany

^b Fraunhofer-Institut für Werkstoffmechanik IWM, Wöhlerstraße 11, D-79108 Freiburg i. Br., Germany

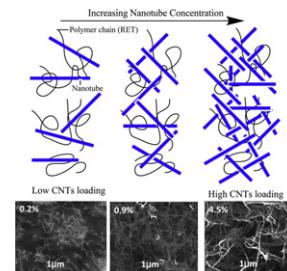
^c Freiburg Institute for Advanced Studies, School of Soft Matter Research, Albertstraße 19, D-79104 Freiburg i. Br., Germany



Improved mechanical properties of carbon nanotube/polymer composites through the use of carboxyl-epoxide functional group linkages pp 5071–5077

S.H. Park, P.R. Bandaru*

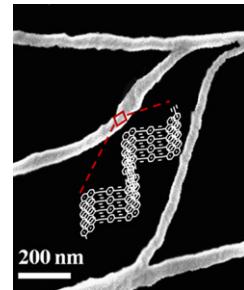
Materials Science Program, Department of Mechanical and Aerospace Engineering, University of California, San Diego, La Jolla, CA 92093-0411, United States



Synthesis and property studies of linear and kinked poly(pyreneethynylene)s pp 5078–5086

Jhinuk Gupta, Sajini Vadukumpally, Suresh Valiyaveettil*

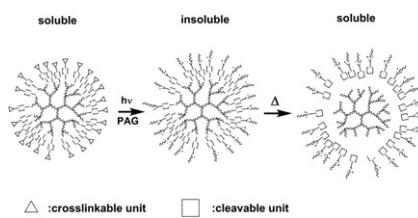
Department of Chemistry, National University of Singapore, 3 Science Drive 3, Singapore 117543



Novel photo-cross-linkable dendrimers having thermal de-cross-linking properties pp 5087–5094

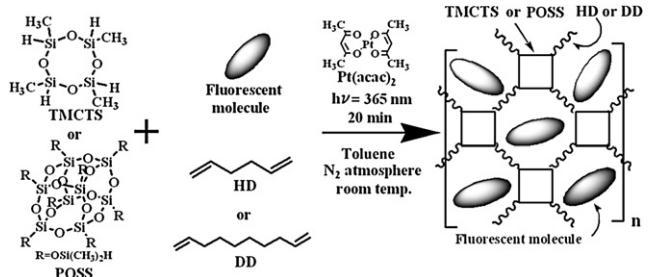
Haruyuki Okamura*, Masamitsu Shirai

Department of Applied Chemistry, Graduate School of Engineering, Osaka Prefecture University, 1-1 Gakuen-cho, Nakaku, Sakai, Osaka 599-8531, Japan

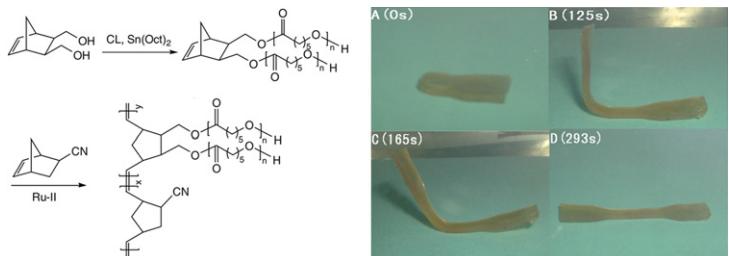


Synthesis and optical properties of organic–inorganic hybrid gels containing fluorescent molecules

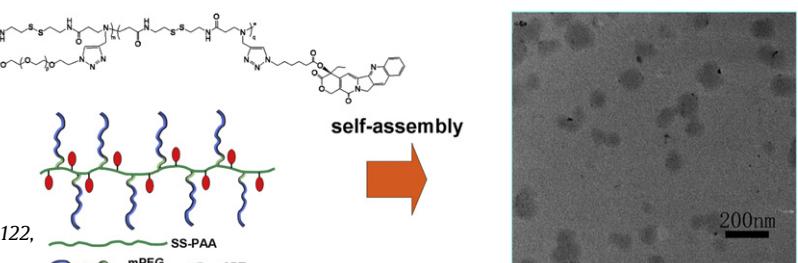
pp 5095–5099

Naofumi Naga^{a,*}, Tomoharu Miyanaga^a, Hidemitsu Furukawa^b^a Department of Applied Chemistry, College of Engineering, Shibaura Institute of Technology, 3-7-5 Toyosu, Koto-ku, Tokyo 135-8548, Japan^b Department of Mechanical Systems Engineering, Graduate School of Science and Engineering, Yamagata University, 4-3-16 Jonan, Yonezawa, Yamagata 992-8510, Japan**A novel shape memory polynorbornene functionalized with poly(ϵ -caprolactone) side chain and cyano group through ring-opening metathesis polymerization**

pp 5100–5106

Dan Yang^a, Wei Huang^a, Jiahui Yu^{b,**}, Jisen Jiang^c, Liya Zhang^a, Meiran Xie^{a,*}^a Department of Chemistry, East China Normal University, Shanghai 200062, PR China^b Institute for Advanced Interdisciplinary Research, East China Normal University, Shanghai 200062, PR China^c Department of Physics, Center of Functional Nanomaterials and Devices, East China Normal University, Shanghai 200241, PR China**Fabrication of reduction-degradable micelle based on disulfide-linked graft copolymer-camptothecin conjugate for enhancing solubility and stability of camptothecin**

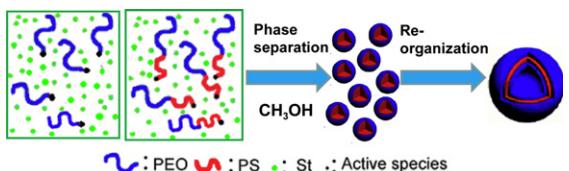
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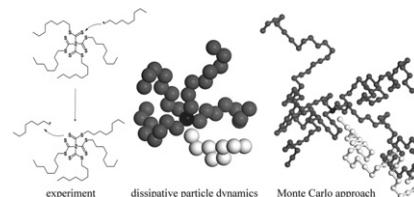
Honglei Fan^a, Jin Huang^{a,b,*}, Yaping Li^c, Jiahui Yu^{b,**}, Jinghua Chen^d^a College of Chemical Engineering, Wuhan University of Technology, Wuhan 430070, PR China^b Institutes for Advanced Interdisciplinary Research, East China Normal University, Shanghai 200062, PR China^c Center for Drug Delivery System, Shanghai Institute of Material Medica, Chinese Academy of Sciences, Shanghai 201203, PR China^d School of Medicine and Pharmaceutics, Jiangnan University, Wuxi 214122, PR China**Direct preparation of vesicles from one-pot RAFT dispersion polymerization**

pp 5115–5121

Chuan-Qun Huang, Cai-Yuan Pan*

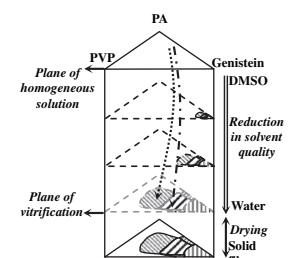
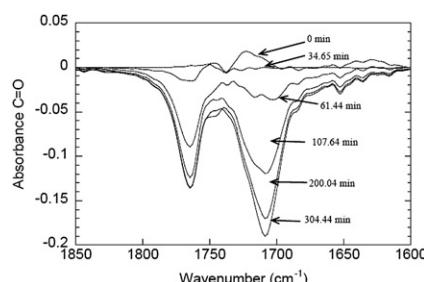
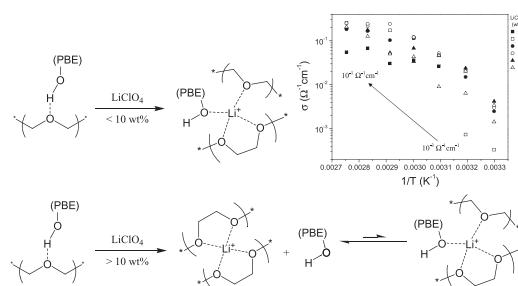
Department of Polymer Science and Engineering, CAS Key Laboratory of Soft Matter Chemistry, University of Science and Technology of China, Hefei, Anhui 230026, PR China



Shielding effects in polymer–polymer reactions, 3. Z-RAFT star polymerization under various solvent conditions**pp 5122–5134**Markus G. Fröhlich^a, Michael M. Nardai^a, Nadja Förster^b, Philipp Vana^b, Gerhard Zifferer^{a,*}^a Department of Physical Chemistry, University of Vienna, Währinger Str. 42, A-1090 Wien, Austria^b Institute of Physical Chemistry, Georg-August-University Göttingen, Tammannstraße 6, D-37077 Göttingen, Germany**Effects of genistein modification on miscibility and hydrogen bonding interactions in poly(amide)/poly(vinyl pyrrolidone) blends and membrane morphology development during coagulation****pp 5135–5144**

Chandrasekaran Neelakandan, Thein Kyu*

Department of Polymer Engineering, University of Akron, Akron, OH 44325, USA

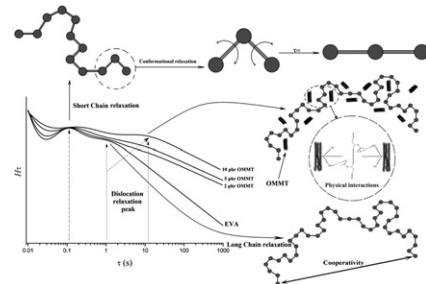
**A dual mode interpretation of the kinetics of penetrant-induced swelling and deswelling in a glassy polymer****pp 5145–5150**Juchen Guo^a, Timothy A. Barbari^{b,*}^a Department of Chemical and Biomolecular Engineering, University of Maryland, College Park, MD 20742, USA^b Department of Physics, Georgetown University, Washington, DC 20057, USA**Polymer electrolytes based on a ternary miscible blend of poly(ethylene oxide), poly(bisphenol A-co-epichlorohydrin) and poly(vinyl ethyl ether)****pp 5151–5164**Ana Maria Rocco^{a,*}, Alexander de Assis Carias^a, Robson Pacheco Pereira^b^a Grupo de Materiais Condutores e Energia, Escola de Química, Universidade Federal do Rio de Janeiro, Av. Horácio Macedo, 2030, Rio de Janeiro 21941-909, Brazil^b Instituto de Ciências Exatas (ICEx), Pólo Universitário de Volta Redonda, Universidade Federal Fluminense, Volta Redonda, Rio de Janeiro, Brazil

Influence of physical interaction between organoclay and poly(ethylene-co-vinyl acetate) matrix and effect of clay content on rheological melt state

pp 5165–5171

V. Pistor*, A. Lizot, R. Fiorio, A.J. Zattera*

Laboratory of Polymers, Center of Exact Sciences and Technology (CCET), Caxias do Sul University (UCS), Caxias do Sul, RS, Brazil

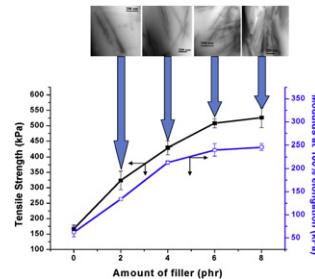

Novel in situ polydimethylsiloxane-sepiolite nanocomposites: Structure-property relationship

pp 5172–5185

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^a Rubber Technology Centre, Indian Institute of Technology, Kharagpur 721302, India

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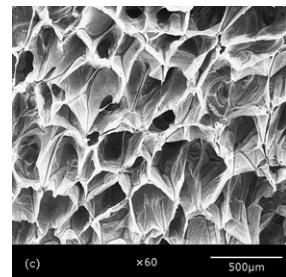

Long chain branching polylactide: Structures and properties

pp 5186–5197

Jianye Liu^a, Lijuan Lou^a, Wei Yu^{a,*}, Ruogu Liao^a, Runming Li^b, Chixing Zhou^a

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^b College of Chemistry and Chemical Engineering, Henan University, Kaifeng 475004, PR China

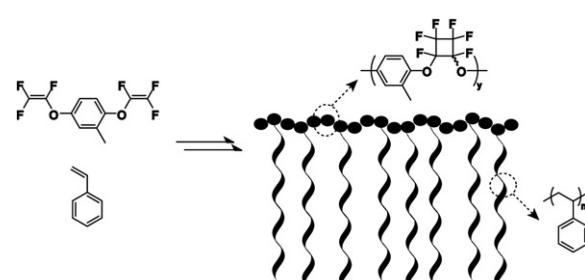

A novel perfluorocyclobutyl aryl ether-based graft copolymer via 2-methyl-1,4-bistrifluorovinyloxybenzene and styrene

pp 5198–5206

Hao Liu^a, Sen Zhang^a, Yongjun Li^a, Dong Yang^{b,*}, Jianhua Hu^b, Xiaoyu Huang^{a,**}

^a Key Laboratory of Organofluorine Chemistry and Laboratory of Polymer Materials, Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences, 345 Lingling Road, Shanghai 200032, PR China

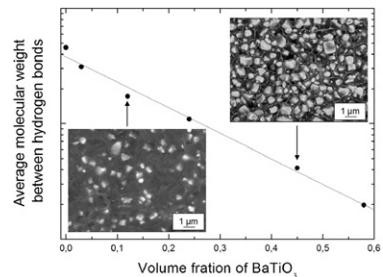
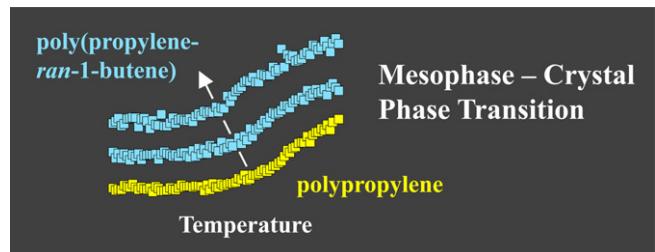
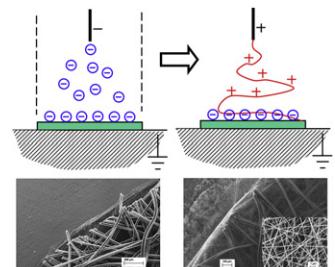
^b Key Laboratory of Molecular Engineering of Polymers (Ministry of Education), Laboratory of Advanced Materials and Department of Macromolecular Science, Fudan University, 220 Handan Road, Shanghai 200433, P. R. China



Dynamic mechanical behaviour of polyamide 11/Barium titanate ferroelectric composites**pp 5207–5211**

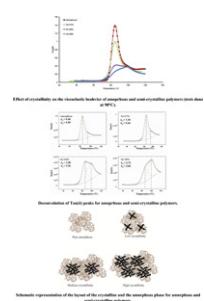
Jean-Fabien Capsal, Chloé Pousserot, Eric Dantras*, Jany Dandurand, Colette Lacabanne

Physique des Polymères, Institut CARNOT-CIRIMAT, Université Paul Sabatier, 31062 Toulouse cedex 09, France

**X-ray study of crystallization of random copolymers of propylene and 1-butene via a mesophase****pp 5212–5220**Daniela Mileva^a, René Androsch^{a,*}, Sergio S. Funari^b, Bernhard Wunderlich^c^a Martin-Luther-University Halle-Wittenberg, Center of Engineering Sciences, D-06099 Halle/Saale, Germany^b Hasylab at DESY, Notkestr. 85, D-22607 Hamburg, Germany^c 200 Baltusrol Rd, Knoxville, TN 379234-37-7, USA**Ion-assisted collection of Nylon-4,6 electrospun nanofibers****pp 5221–5228**Jan C. Uecker^a, Gary C. Tepper^a, Joan Rosell-Llompart^{b,c,*}^a Department of Mechanical Engineering, Virginia Commonwealth University, 601 W Main Street, Richmond VA 23284, USA^b Department of Chemical Engineering, Universitat Rovira i Virgili, Avinguda dels Països Catalans 26, 43007 Tarragona, Spain^c ICREA (Catalan Institution for Research and Advanced Studies), Barcelona, Spain**Linear viscoelastic behavior of poly(ethylene terephthalate) above T_g amorphous viscoelastic properties Vs crystallinity: Experimental and micromechanical modeling****pp 5229–5235**

Fahmi Bédoui*, Michèle Guigou

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Nanocomposites of poly(ether ether ketone) with carbon nanofibers: Effects of dispersion and thermo-oxidative degradation on development of linear viscoelasticity and crystallinity

pp 5236–5244

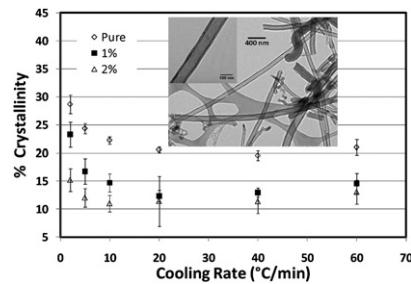
Shriraj H. Modi^{a,b}, Kimberly B. Dikovics^{a,b†}, Halil Gevgilili^a, Gaurav Mago^c, Stephen F. Bartolucci^d, Frank T. Fisher^c, Dilhan M. Kalyon^{a,b,*}

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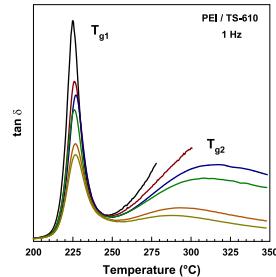


Dynamic relaxation characteristics of polymer nanocomposites based on poly(ether imide) and poly(methyl methacrylate)

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Characterization of nanoclay orientation in polymer nanocomposite film by small-angle X-ray scattering

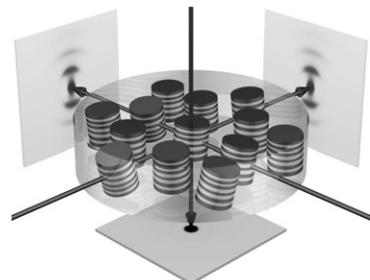
pp 5255–5266

Pranav Nawani^a, Christian Burger^a, Lixia Rong^a, Benjamin Chu^a, Benjamin S. Hsiao^{a,*}, Andy H. Tsou^b, Weiqing Weng^c

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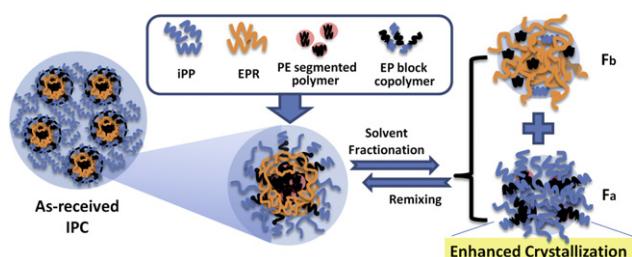


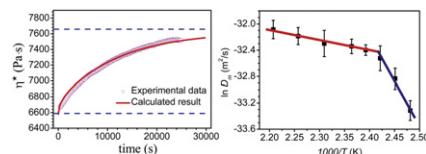
Relaxation of shear-enhanced crystallization in impact-resistant polypropylene copolymer: Insight from morphological evolution upon thermal treatment

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Shijie Song, Jiachun Feng*, Peiyi Wu

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Effects of phase behavior on mutual diffusion at polymer layers interface**pp 5276–5281**Liang Yang^a, Tongchuan Suo^a, Yanhua Niu^{a,*}, Zhigang Wang^{a,b,*}, Dadong Yan^a, Howard Wang^c^a CAS Key Laboratory of Engineering Plastics, Beijing National Laboratory for Molecular Sciences, Institute of Chemistry, Chinese Academy of Sciences, 100190 Beijing, PR China^b CAS Key Laboratory of Soft Matter Chemistry, Department of Polymer Science and Engineering, Hefei National Laboratory for Physical Sciences at the Microscale, University of Science and Technology of China, Hefei, Anhui Province 230026, PR China^c Department of Mechanical Engineering, State University of New York at Binghamton, Binghamton, NY 13902, USA

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