

Polymer Vol. 51, No. 18, 19 August 2010

Contents

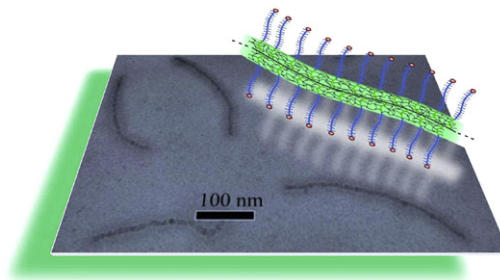
FEATURE ARTICLE

One-dimensional organic–inorganic hybrid nanomaterials

pp 4015–4036

Jiayin Yuan, Axel H.E. Müller*

Makromolekulare Chemie II, Universität Bayreuth, D-95440 Bayreuth, Germany



POLYMER PAPERS

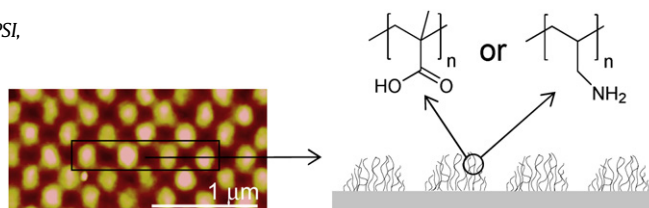
Functionalization of fluoropolymer surfaces with nanopatterned polyelectrolyte brushes

pp 4037–4043

Sonja Neuhaus^{a,b}, Celestino Padeste^{a,*}, Harun H. Solak^a, Nicholas D. Spencer^b

^a *Laboratory for Micro- and Nanotechnology, Paul Scherrer Institut, 5232 Villigen PSI, Switzerland*

^b *Laboratory for Surface Science and Technology, Department of Materials, ETH Zurich, Wolfgang-Pauli-Strasse 10, 8093 Zurich, Switzerland*

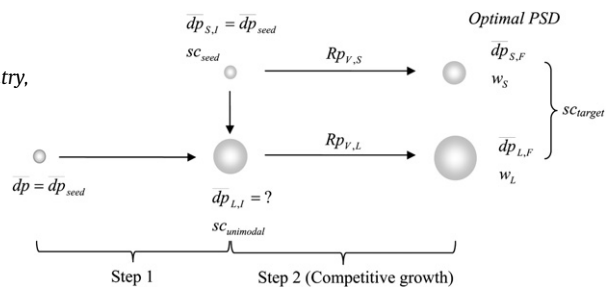


Control of particle size distribution for the synthesis of small particle size high solids content latexes

pp 4044–4052

Inês de F.A. Mariz, José C. de la Cal, Jose R. Leiza*

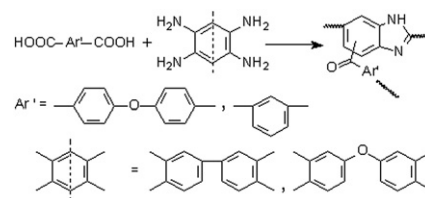
Institute for Polymer Materials, POLYMAT and Grupo de Ingeniería Química,
Dpto. de Química Aplicada, Facultad de Ciencias Químicas, University of the Basque Country,
Joxe Mari Korta zentroa, Tolosa Etorbidea 72, 20018 Donostia-San Sebastián, Spain

**Some aspects of polybenzimidazoles' synthesis in P₂O₅ containing condensation media**

pp 4053–4057

Alexey Y. Leykin*, Alexander I. Fomenkov, Elena G. Galpern, Ivan V. Stankevich,
Alexander L. Rusanov

A. N. Nesmeyanov Institute of Organoelement Compounds of Russian Academy of Science,
ul. Vavilova 28, Moscow 119991, Russia

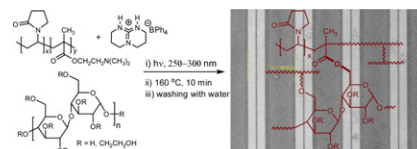
**Photo-induced crosslinking of water-soluble polymers with a new photobase generator**

pp 4058–4062

Cheng Bo Cao^{a,b,**}, Chen Zhou^a, Xun Sun^b, Jian Ping Gao^b, Zhi Yuan Wang^{b,*}

^a School of Chemistry and Chemical Engineering, Shandong University, Jinan 250061, Shandong, China

^b Department of Chemistry, Carleton University, 1125 Colonel By Drive, Ottawa, Ontario, Canada K1S 5B6

**Self-healing of a high temperature cured epoxy using poly(dimethylsiloxane) chemistry**

pp 4063–4068

C.L. Mangun^{a,*}, A.C. Mader^b, N.R. Sottos^{c,d}, S.R. White^{d,e}

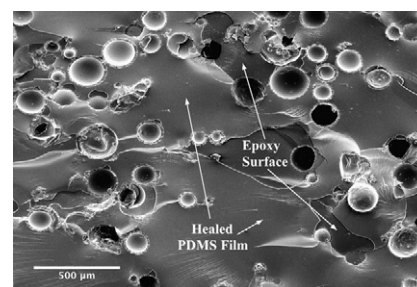
^a CU Aerospace, 2100 S. Oak St., Suite 206, Champaign, IL 61820, USA

^b Hochschule Bremen, Neustadtswall 30, Bremen, D-28199, Germany

^c Dept. of Materials Science and Engineering, UIUC, 1304 W. Green St., Urbana, IL 61801, USA

^d Beckman Institute, UIUC, 405 N. Mathews Av., Urbana, IL 61801, USA

^e Dept. of Aerospace Engineering, UIUC, 104 S. Wright St., Urbana, IL 61801, USA



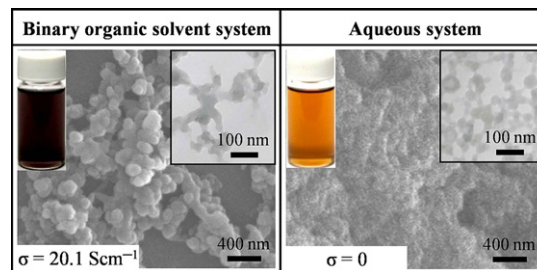
A facile and rapid synthesis of unsubstituted polythiophene with high electrical conductivity using binary organic solvents

pp 4069–4076

Sang Soo Jeon^a, Soo Jung Yang^a, Kee-Jung Lee^b, Seung Soon Im^{a,*}

^a Department of Fiber and Polymer Engineering, Hanyang University, Seoul, 133-791, Republic of Korea

^b Department of Chemical Engineering, Hanyang University, Seoul, 133-791, Republic of Korea

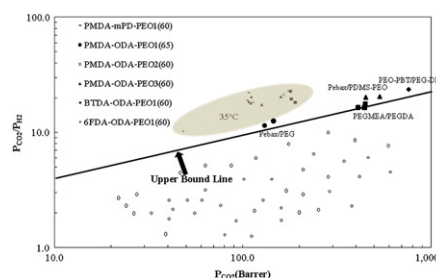


Synthesis and characterization of poly (ethylene oxide) containing copolyimides for hydrogen purification

pp 4077–4086

Hangzheng Chen, Youchang Xiao, Tai-Shung Chung*

Department of Chemical & Biomolecular Engineering, National University of Singapore, 10 Kent Ridge Crescent, Singapore 119260

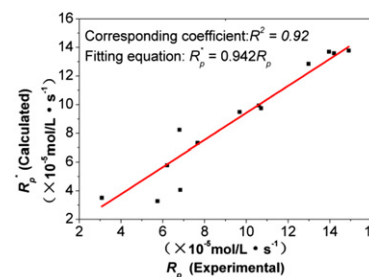


Kinetic study on the ring-opening polymerization of octamethylcyclotetrasiloxane (D4) in miniemulsion

pp 4087–4094

Sijiu Jiang, Teng Qiu, Xiaoyu Li*

School of Materials Science and Engineering, Key Laboratory of Carbon Fiber and Functional Polymers, Ministry of Education, Beijing University of Chemical Technology, Beijing 100029, PR China



Self-assembly of cationic rod-like poly(2,5-pyridine) by acidic bis(trifluoromethane)sulfonimide in the hydrated state: A highly-ordered self-assembled protonic conductor

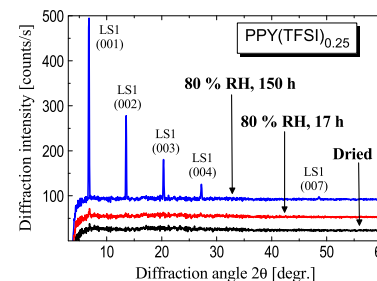
pp 4095–4102

M. Vilkmán^{a,b,*}, A. Lankinen^c, N. Volk^a, P. Kostamo^c, O. Ikkala^a

^a Aalto University School of Science and Technology (previously Helsinki University of Technology), Molecular Materials, P.O. Box 15100, FI-00076, Espoo, Finland

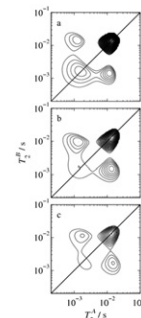
^b VTT Technical Research Centre of Finland, Printed Functional Solutions, P.O. Box 1000, FI-02044 VTT, Finland

^c Aalto University School of Science and Technology (previously Helsinki University of Technology), Department of Micro- and Nanosciences, P.O. Box 13500, FI-00076 Aalto, Espoo, Finland



Interactions of binary liquid mixtures with polysaccharides studied using multi-dimensional NMR relaxation time measurements

pp 4103–4109

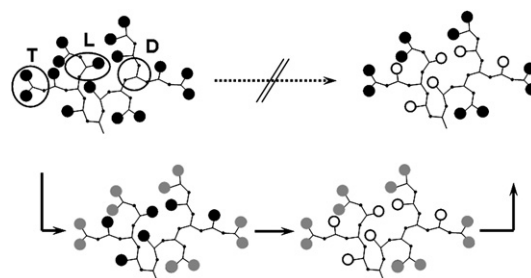
J. Kolz^a, Y. Yarovoy^b, J. Mitchell^a, M.L. Johns^{a,*}, L.F. Gladden^a^a Magnetic Resonance Research Centre, Department of Chemical Engineering and Biotechnology, University of Cambridge, Pembroke Street, Cambridge, CB2 3RA, UK^b Unilever R&D, NA 40 Merritt Boulevard, Trumbull, CT 06611, USA

Solution properties of selectively modified hyperbranched polyesters

pp 4110–4120

Susanne Boye, Hartmut Komber, Peter Friedel, Albena Lederer^{*}

Leibniz-Institut für Polymerforschung Dresden e.V., Hohe Str. 6, 01069 Dresden, Germany

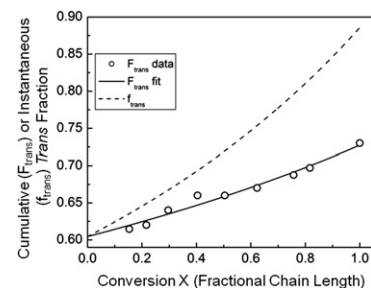


cis/trans Gradients in living ring-opening metathesis polymerization

pp 4121–4126

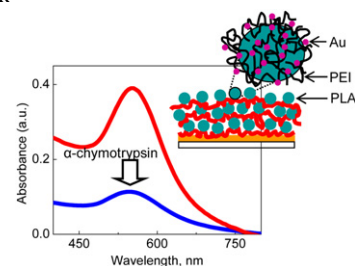
John P. Bishop, Richard A. Register^{*}

Department of Chemical and Biological Engineering, Princeton University, Princeton, NJ 08544-5263, United States



Biodegradable self-reporting nanocomposite films of poly(lactic acid) nanoparticles engineered by layer-by-layer assembly

pp 4127–4139

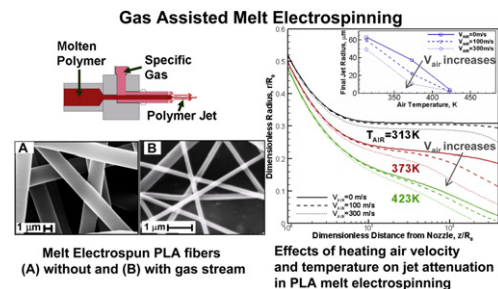
Victor H. Orozco^{a,b}, Veronika Kozlovskaya^a, Eugenia Kharlampieva^a, Betty L. López^b, Vladimir V. Tsukruk^{a,*}^a School of Materials Science and Engineering, Georgia Institute of Technology, Atlanta, GA 30332, USA^b Grupo Ciencia de los Materiales, Universidad de Antioquia, Calle 62 52 59 Medellín, Antioquia, Colombia

Nanofibers from gas-assisted polymer melt electrospinning

pp 4140–4144

Eduard Zhmayev, Daehwan Cho, Yong Lak Joo*

School of Chemical and Biomolecular Engineering, Cornell University, Ithaca, NY 14853, USA

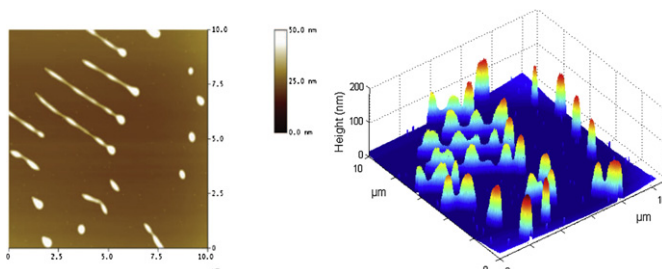


Dynamic formation of SEBS copolymer submicrometric structures

pp 4145–4151

Michele A. Salvador^a, Andrea G.C. Bianchi^{a,*}, Marcelo A. Pereira-da-Silva^{b,c}, Antonio J.F. Carvalho^d, Roberto M. Faria^b

^a Physics Department, University Federal of Ouro Preto, Campus Morro do Cruzeiro, Ouro Preto – 35400-000, MG, Brazil
^b Institute of Physics of São Carlos, University of São Paulo, Av. Trabalhador São-carlense, 400, São Carlos - 1356-970, SP, Brazil
^c UNICEP – Centro Universitário Central Paulista, R. Miguel Petroni, 5111, São Carlos - 13563-470– SP, Brazil
^d Department of Material Engineering, University of São Paulo, Av. Trabalhador São-carlense, 400, São Carlos 1356-970, SP, Brazil

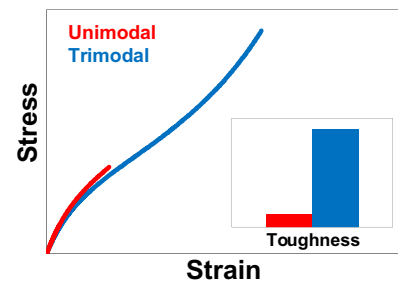


Toughness and fracture energy of PDMS bimodal and trimodal networks with widely separated precursor molar masses

pp 4152–4159

Geoffrey D. Genesky, Claude Cohen*

School of Chemical and Biomolecular Engineering, Olin Hall, Cornell University, Ithaca, NY 14850, USA

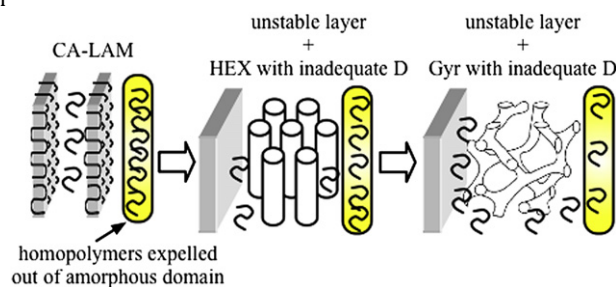


Characteristic phase behavior of polybutadiene-block-poly(ε-caploractone)/polybutadiene blend after melting crystalline-amorphous alternating lamellar structure

pp 4160–4168

Hideaki Takagi^a, Katsuhiko Yamamoto^{a,*}, Shigeru Okamoto^a, Shinichi Sakurai^b

^a Graduate School of Engineering, Department of Materials Science & Technology, Nagoya Institute of Technology, Gokiso-cho, Showa-ku, Nagoya 466-8555, Japan
^b Department of Polymer Science & Engineering, Kyoto Institute of Technology, Matsugasaki, Sakyo-ku, Kyoto 606-8585, Japan

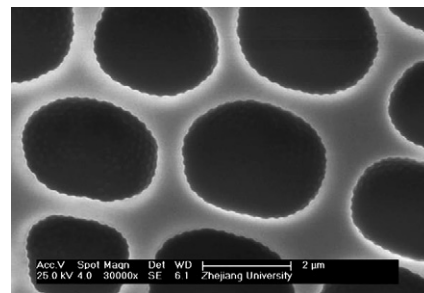


Particle-assisted fabrication of honeycomb-structured hybrid films via breath figures method

pp 4169–4175

Wei Sun, Zhen Shao, Jian Ji*

MOE Key Laboratory of Macromolecular Synthesis and Functionalization, Department of Polymer Science and Engineering, Zhejiang University, Hangzhou 310027, China



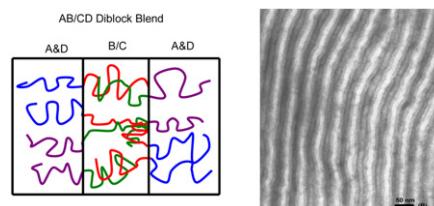
Self-assembly of an A–B diblock copolymer blended with a C homopolymer and a C–D diblock copolymer through hydrogen bonding interaction

pp 4176–4184

Wan-Chun Chen^a, Shiao-Wei Kuo^b, Feng-Chih Chang^{a,*}

^aInstitute of Applied Chemistry, National Chiao Tung University, Hsin Chu, Taiwan

^bDepartment of Materials and Optoelectronic Science, Center for Nanoscience and Nanotechnology, National Sun Yat-Sen University, Kaohsiung, Taiwan



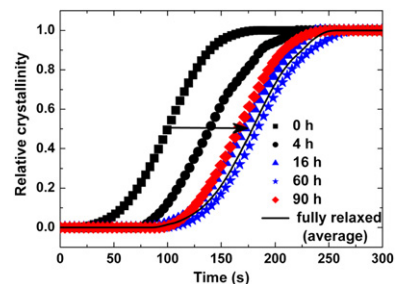
Origin of the melt memory effect in polymer crystallization

pp 4185–4194

José A. Martins^{a,b,*}, Weidong Zhang^{a,b}, António M. Brito^a

^aDepartamento de Engenharia de Polímeros, Universidade do Minho, Campus de Azurém, 4800-058 Guimarães, Portugal

^bCICECO, Universidade de Aveiro, 3810-193 Aveiro, Portugal



Determination of lamella thickness distributions in isotactic polypropylene by X-ray line profile analysis

pp 4195–4199

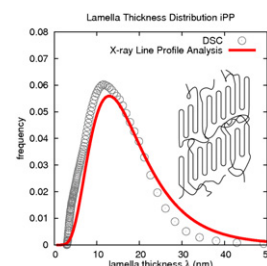
Florian Spieckermann^{a,*}, Harald Wilhelm^{a,b}, Michael Kerber^a, Erhard Schafner^a, Gerald Polt^a, Sigrid Bernstorff^c, Frédéric Addiego^d, Michael Zehetbauer^a

^aResearch Group Physics of Nanostructured Materials, Faculty of Physics, University of Vienna, Boltzmannngasse 5, 1090 Wien, Austria

^bLaboratory of Polymer Engineering LKT-TGM, Wexstrasse 19-23, 1200 Wien, Austria

^cSincrotrone Trieste, Strada Statale 14 km 163.5 in AREA Science Park, 34149 Basovizza, Trieste, Italy

^dCRP Henri Tudor, Advanced Materials and Structures Department, 66 rue de Luxembourg, L-4221 Esch sur Alzette, Luxembourg



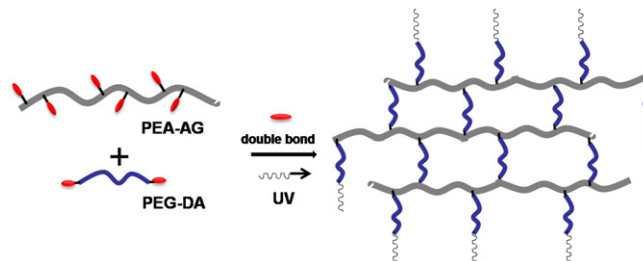
Synthesis, characterization and biodegradation of poly(ester amide)s based hydrogels

pp 4200–4210

Xuan Pang^a, Chih-Chang Chu^{a,b,*}

^a Department of Fiber Science and Apparel Design, Cornell University, Ithaca, NY 14853-4401, USA

^b Biomedical Engineering Program, Cornell University, Ithaca, NY 14853-4401, USA



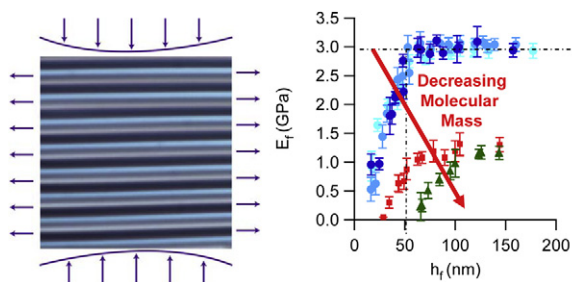
Impact of molecular mass on the elastic modulus of thin polystyrene films

pp 4211–4217

Jessica M. Torres^a, Christopher M. Stafford^b, Bryan D. Vogt^{a,*}

^a Flexible Display Center, Arizona State University, Tempe, AZ 85284, USA

^b Polymers Division, National Institute of Standards and Technology, Gaithersburg, MD 20899, USA

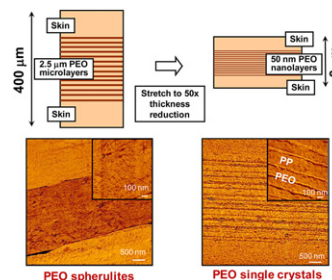


A new method for achieving nanoscale reinforcement of biaxially oriented polypropylene film

pp 4218–4224

Yijian Lin, Anne Hiltner^{*}, Eric Baer

Department of Macromolecular Science and Engineering, Case Western Reserve University, Cleveland, OH 44106-7202, USA

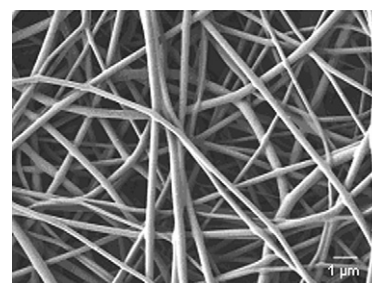


Effect of solvent evaporation rate on the crystalline state of electrospun Nylon 6

pp 4225–4230

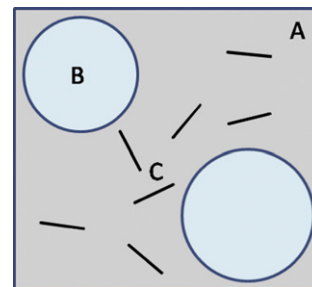
Carl B. Giller, D. Bruce Chase, John F. Rabolt^{*}, Christopher M. Snively^{**}

University of Delaware, Department of Materials Science and Engineering, Newark, DE 19716, USA

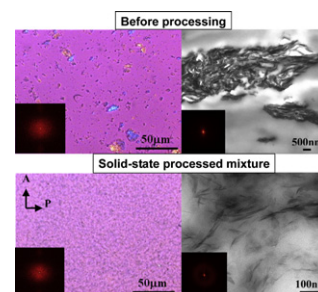


Stabilization and control of phase morphology of PA/SAN blends via incorporation of exfoliated clay

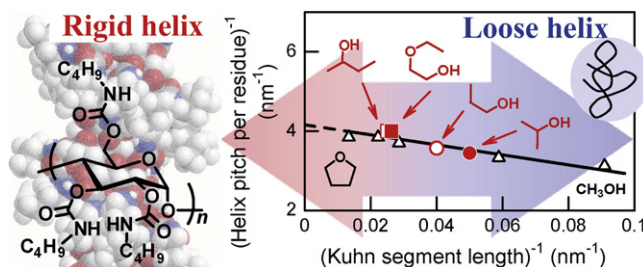
pp 4231–4237

Ehsan Moghbelli^a, Hung-Jue Sue^{a,*}, Sachin Jain^b^a Polymer Technology Center, Department of Mechanical Engineering Texas A&M University, College Station, TX, USA^b BASF – The Chemical Company, Ludwigshafen, Germany**Polypropylene-based nano-composite formation: Delamination of organically modified layered filler via solid-state processing**

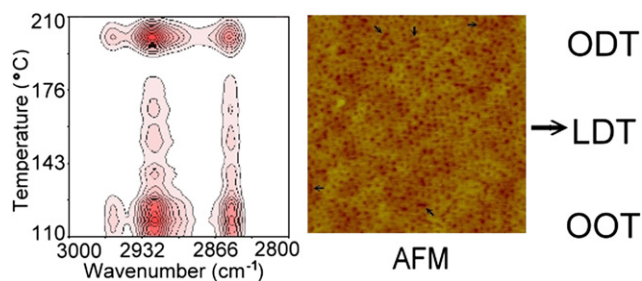
pp 4238–4242

Tomotaka Saito^a, Masami Okamoto^{b,*}^a Research Laboratories, Toyota Boshoku Co. Ltd., 1-1, Toyoda-Cho, Kariya 448-8651, Japan^b Advanced Polymeric Nanostructured Materials Engineering, Graduate School of Engineering, Toyota Technological Institute, Hisakata 2-12-1, Tempaku, Nagoya 468-8511, Japan**Solution properties of amylose tris(*n*-butylcarbamate). Helical and global conformation in alcohols**

pp 4243–4248

Yuichi Sano^a, Ken Terao^{a,*}, Shota Arakawa^a, Masahiro Ohtoh^a, Shinichi Kitamura^b, Takashi Norisuye^a^a Department of Macromolecular Science, Graduate School of Science, Osaka University, 1-1 Machikaneyama-cho, Toyonaka, Osaka 560-0043, Japan^b Graduate School of Life and Environmental Sciences, Osaka Prefecture University, Gakuen-cho, Nakaku, Sakai, Osaka 599-8531, Japan**Order–order, lattice disordering, and order–disorder transition in SEBS studied by two-dimensional correlation infrared spectroscopy**

pp 4249–4258

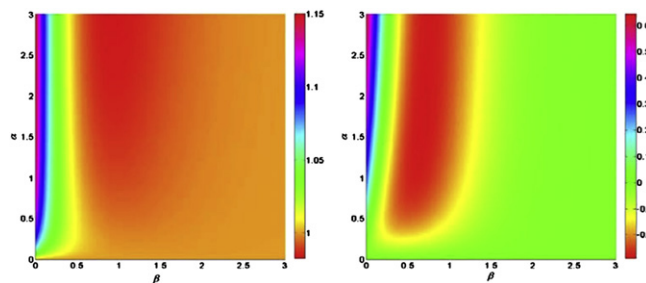
Tao Zhou^{a,*}, Zhiyong Wu^b, Yunyong Li^a, Jiang Luo^a, Zhengguang Chen^a, Jingkui Xia^b, Hongwen Liang^b, Aiming Zhang^{a,*}^a State Key Laboratory of Polymer Materials Engineering of China, Polymer Research Institute, Sichuan University, Chengdu 610065, China^b Baling Petrochemical Industry Co., Ltd of China Sinopec, Yueyang 414014, China

Polymer interphase structure near nanoscale inclusions: Comparison between random walk theory and experiment

pp 4259–4266

Jeffrey S. Meth*, Steven Raymond Lustig

DuPont Nanocomposite Technologies, Central Research & Development,
E.I. DuPont de Nemours & Co., Inc., P.O. Box 80400, Wilmington,
DE 19880-0400, United States

**Microscopic details of the sensing ability of 15-crown-5-ether functionalized poly(bithiophene)**

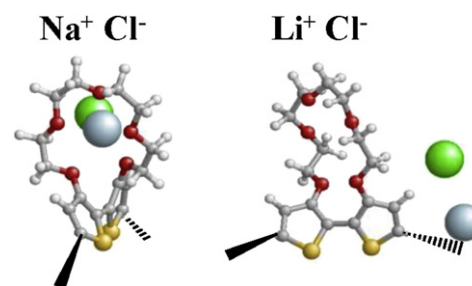
pp 4267–4272

Jordi Casanovas^{a,**}, Francisco Rodríguez-Ropero^b, David Zanuy^b, Carlos Alemán^{b,c,*}

^a Departament de Química, Escola Politècnica Superior, Universitat de Lleida, c/Jaume II No 69,
Lleida E-25001, Spain

^b Departament d'Enginyeria Química, E. T. S. d'Enginyeria Industrial de Barcelona,
Universitat Politècnica de Catalunya, Diagonal 647, 08028 Barcelona, Spain

^c Center for Research in Nano-Engineering, Universitat Politècnica de Catalunya,
Campus Sud, Edifici C', C/Pasqual i Vila s/n, Barcelona E-08028, Spain



*Corresponding author



Full text of this journal is available, on-line from **ScienceDirect**. Visit www.sciencedirect.com for more information.

Abstracted/indexed in: AGRICOLA, Beilstein, BIOSIS Previews, CAB Abstracts, Chemical Abstracts, Current Contents: Life Sciences, Current Contents: Physical, Chemical and Earth Sciences, Current Contents Search, Derwent Drug File, Ei compendex, EMBASE/ Excerpta Medica, Medline, PASCAL, Research Alert, Science Citation Index, SciSearch. Also covered in the abstract and citation database SCOPUS®. Full text available on ScienceDirect®



ELSEVIER

ISSN 0032-3861

Author Index

- Addiego, F. 4195
 Alemán, C. 4267
 Arakawa, S. 4243
- Baer, E. 4218
 Bernstorff, S. 4195
 Bianchi, A. G. C. 4145
 Bishop, J. P. 4121
 Boye, S. 4110
 Brito, A. M. 4185
- Cao, C. B. 4058
 Carvalho, A. J. F. 4145
 Casanovas, J. 4267
 Chang, F.-C. 4176
 Chase, D. B. 4225
 Chen, H. 4077
 Chen, W.-C. 4176
 Chen, Z. 4249
 Cho, D. 4140
 Chu, C.-C. 4200
 Chung, T.-S. 4077
 Cohen, C. 4152
- de la Cal, J. C. 4044
- Faria, R. M. 4145
 Fomenkov, A. I. 4053
 Friedel, P. 4110
- Galpern, E. G. 4053
 Gao, J. P. 4058
 Genesky, G. D. 4152
 Giller, C. B. 4225
 Gladden, L. F. 4103
- Hiltner, A. 4218
- Ikkala, O. 4095
 Im, S. S. 4069
- Jain, S. 4231
 Jeon, S. S. 4069
 Ji, J. 4169
 Jiang, S. 4087
 Johns, M. L. 4103
 Joo, Y. L. 4140
- Kerber, M. 4195
 Kharlampieva, E. 4127
 Kitamura, S. 4243
- Kolz, J. 4103
 Komber, H. 4110
 Kostamo, P. 4095
 Kozlovskaya, V. 4127
 Kuo, S.-W. 4176
- Lankinen, A. 4095
 Lederer, A. 4110
 Lee, K.-J. 4069
 Leiza, J. R. 4044
 Leykin, A. Y. 4053
 Li, X. 4087
 Li, Y. 4249
 Liang, H. 4249
 Lin, Y. 4218
 López, B. L. 4127
 Luo, J. 4249
 Lustig, S. R. 4259
- Mader, A. C. 4063
 Mangun, C. L. 4063
 Mariz, I. d. F. A. 4044
 Martins, J. A. 4185
 Meth, J. S. 4259
 Mitchell, J. 4103
 Moghbelli, E. 4231
 Müller, A. H. E. 4015
- Neuhaus, S. 4037
 Norisuye, T. 4243
- Ohtoh, M. 4243
 Okamoto, M. 4238
 Okamoto, S. 4160
 Orozco, V. H. 4127
- Padeste, C. 4037
 Pang, X. 4200
 Pereira-da-Silva, M. A. 4145
 Polt, G. 4195
- Qiu, T. 4087
- Rabolt, J. F. 4225
 Register, R. A. 4121
 Rodríguez-Ropero, F. 4267
 Rusanov, A. L. 4053
- Saito, T. 4238
 Sakurai, S. 4160
 Salvador, M. A. 4145
- Sano, Y. 4243
 Schafler, E. 4195
 Shao, Z. 4169
 Snively, C. M. 4225
 Solak, H. H. 4037
 Sottos, N. R. 4063
 Spencer, N. D. 4037
 Spieckermann, F. 4195
 Stafford, C. M. 4211
 Stankevich, I. V. 4053
 Sue, H.-J. 4231
 Sun, W. 4169
 Sun, X. 4058
- Takagi, H. 4160
 Terao, K. 4243
 Torres, J. M. 4211
 Tsukruk, V. V. 4127
- Vilkman, M. 4095
 Vogt, B. D. 4211
 Volk, N. 4095
- Wang, Z. Y. 4058
 White, S. R. 4063
 Wilhelm, H. 4195
 Wu, Z. 4249
- Xia, J. 4249
 Xiao, Y. 4077
- Yamamoto, K. 4160
 Yang, S. J. 4069
 Yarovoy, Y. 4103
 Yuan, J. 4015
- Zanuy, D. 4267
 Zehetbauer, M. 4195
 Zhang, A. 4249
 Zhang, W. 4185
 Zhmayev, E. 4140
 Zhou, C. 4058
 Zhou, T. 4249