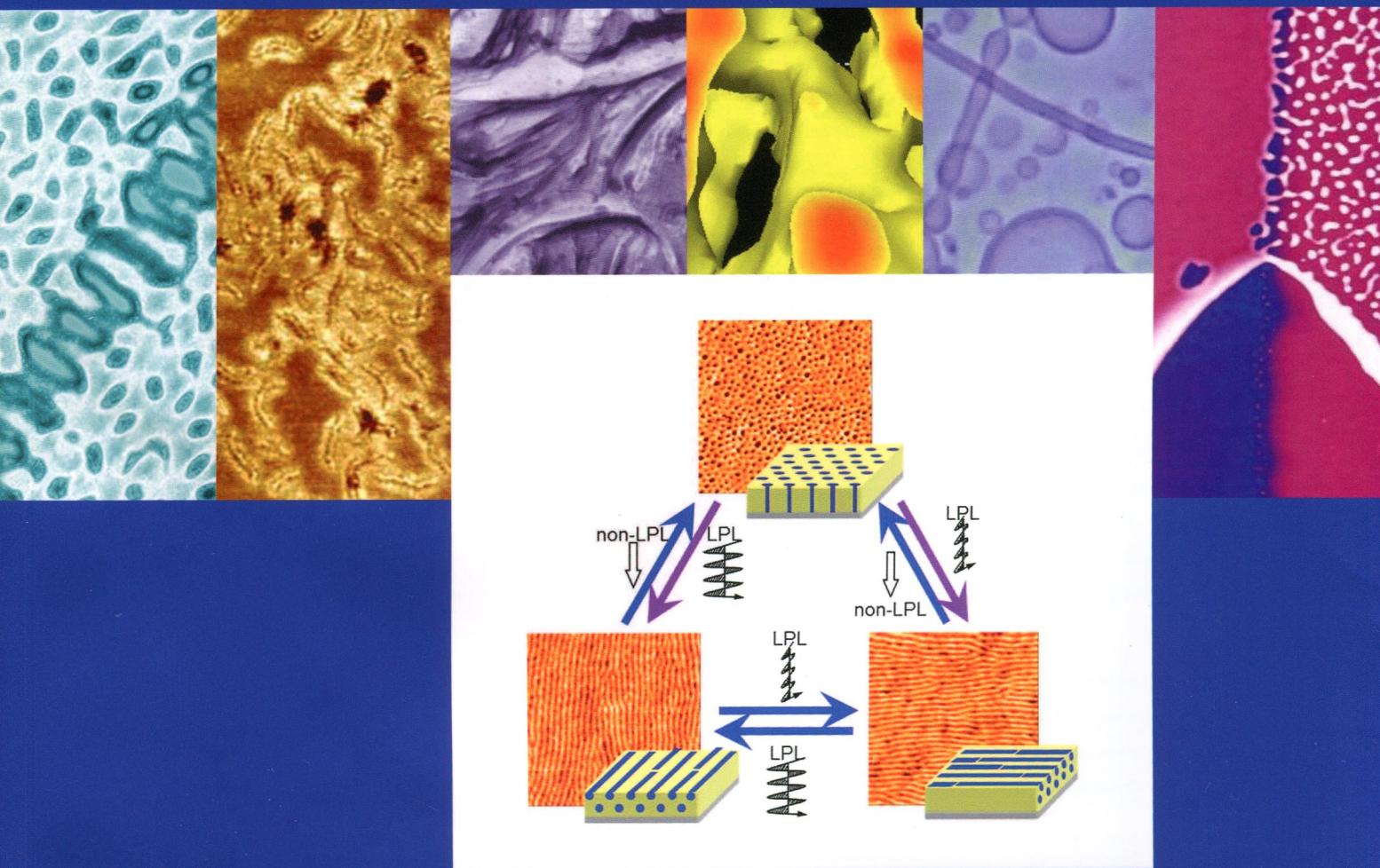


ПИ
Р80/3



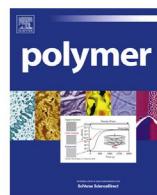
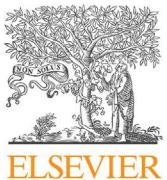
VOLUME 54 ISSUE 22, 18 OCTOBER 2013

polymer



Available online at www.sciencedirect.com

ScienceDirect



Polymer Vol. 54, No. 22, 18 October 2013

Contents

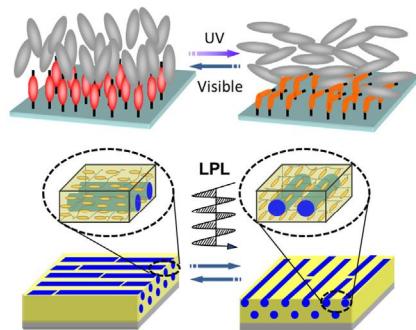
FEATURE ARTICLE

Versatility of photoalignment techniques: From nematics to a wide range of functional materials pp 6053–6072

Takahiro Seki^{a,*}, Shusaku Nagano^b, Mitsuo Hara^a

^aDepartment of Molecular Design and Engineering, Graduate School of Engineering, Nagoya University, Furo-cho, Chikusa, Nagoya 464-8603, Japan

^bNagoya University Venture Business Laboratory, Furo-cho, Chikusa, Nagoya 464-8603, Japan

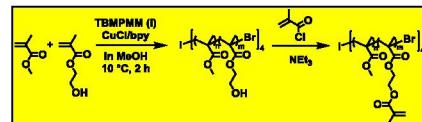


POLYMER COMMUNICATION

Multi-methacrylated star-shaped, photocurable poly(methyl methacrylate) macromonomers via quasiliving ATRP with suppressed curing shrinkage pp 6073–6077

Amália Szanka, Györgyi Szarka, Béla Iván*

Department of Polymer Chemistry, Institute of Materials and Environmental Chemistry, Research Centre for Natural Sciences, Hungarian Academy of Sciences, H-1525 Budapest, Pusztaszeri u. 59-67, P. O. Box 17, Hungary

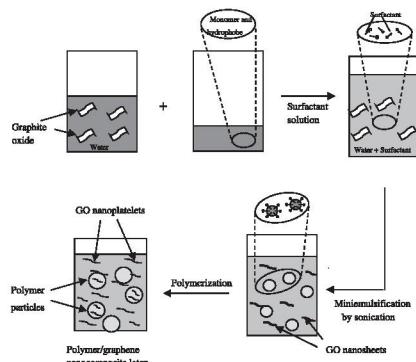


POLYMER PAPERS***In situ* exfoliation of graphite oxide nanosheets in polymer nanocomposites using miniemulsion polymerization**

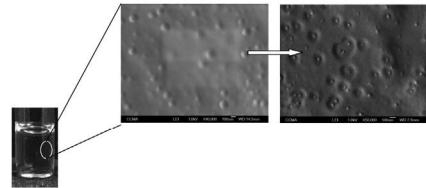
Hussein M. Etmimi, Peter E. Mallon*

Department of Chemistry and Polymer Science, University of Stellenbosch, Private Bag X1,
Matieland 7602, South Africa

pp 6078–6088

**New fluorinated hybrid organic/inorganic water soluble polymeric network**

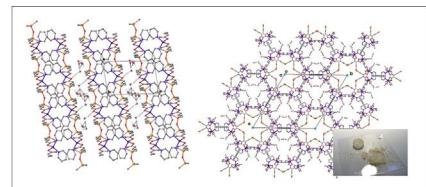
pp 6089–6095

Arnaud Zenerino^a, Sonia Amigoni^a, Elisabeth Taffin de Givenchy^a, Denis Josse^b,
Frédéric Guittard^{a,*}^a Univ. Nice Sophia Antipolis, CNRS, LPMC UMR 7336, Surface & Interface Group, Parc Valrose,
06100 Nice, France^b Institut de recherche biomédicale des armées, département de toxicologie, unité protection-
décontamination, 24 avenue des maquis du grésivaudan, 38700 La Tronche et Service
Départemental d'Incendie et de Secours des Alpes-Maritimes, 140, Avenue de
Lattre de Tassigny BP99, 06271 Villeneuve Loubet Cedex, France**New highly ordered hydrophobic siloxane-based coordination polymers**

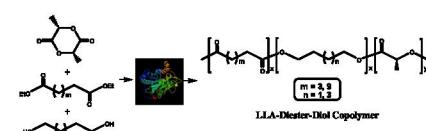
pp 6096–6104

Carmen Racles*, Sergiu Shova, Maria Cazacu, Daniel Timpu

"Petru Poni" Institute of Macromolecular Chemistry, Aleea Gr. Ghica Voda 41A, 700487 Iasi, Romania

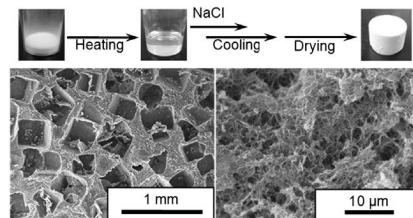
**Lipase-catalyzed synthesis of aliphatic polyesters via copolymerization of lactide with diesters and diols**

pp 6105–6113

Zhaozhong Jiang^{a,*}, Junwei Zhang^b^a Molecular Innovations Center, Yale University, 600 West Campus Drive, West Haven, CT 06516, USA^b Department of Chemical and Environmental Engineering, Yale University, 55 Prospect Street, New Haven,
CT 06511, USA

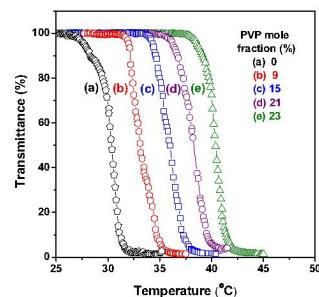
Macroscopic cavities within a microporous 3-D network: A poly(γ -glutamic acid) monolith prepared by combination of particulate templates and a phase separation technique

pp 6114–6118

Sung-Bin Park^a, Junji Sakamoto^a, Moon-Hee Sung^{b,c}, Hiroshi Uyama^{a,*}^a Department of Applied Chemistry, Graduate School of Engineering, Osaka University, Suita 565-0871, Japan^b Department of Advanced Fermentation Fusion Science & Technology, Kookmin University, Seoul 136-702, Republic of Korea^c BioLeaders Corporation, Yongsandong, Yuseong-gu, Daejeon 305-500, Republic of Korea

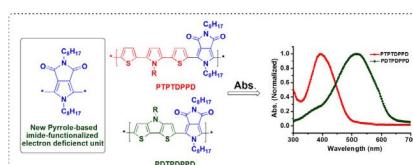
One-pot synthesis of poly(N-vinylcaprolactam)-based biocompatible block copolymers using a dual initiator for ROP and RAFT polymerization

pp 6119–6124

Young Chang Yu^a, Guoxue Li^a, Jinsang Kim^{b,c,d,e}, Ji Ho Youk^{a,*}^a Department of Advanced Fiber Engineering, Division of Nano-Systems, Inha University, Incheon 402-751, Republic of Korea^b Materials Science and Engineering, University of Michigan, Ann Arbor, MI 48109, United States^c Macromolecular Science and Engineering, University of Michigan, Ann Arbor, MI 48109, United States^d Chemical Engineering, University of Michigan, Ann Arbor, MI 48109, United States^e Biomedical Engineering, University of Michigan, Ann Arbor, MI 48109, United States

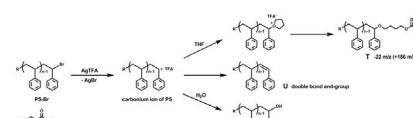
Synthesis and photovoltaic properties of donor–acceptor polymers incorporating a structurally-novel pyrrole-based imide-functionalized electron acceptor moiety

pp 6125–6132

Vellaiappillai Tamilavan^a, Myungkwan Song^b, Rajalingam Agneeswari^a, Jae-Wook Kang^c, Do-Hoon Hwang^a, Myung Ho Hyun^{a,*}^a Department of Chemistry, Chemistry Institute for Functional Materials, Pusan National University, Busan 609-735, Republic of Korea^b Advanced Functional Thin Films Department, Korea Institute of Materials Science, Changwon 641-831, Republic of Korea^c Professional Graduate School of Flexible and Printable Electronics, Department of Flexible and Printable Electronics, Chonbuk National University, Jeonju 561-756, Republic of Korea

MALDI-TOF MS characterization of polystyrene synthesized by ATRP

pp 6133–6139

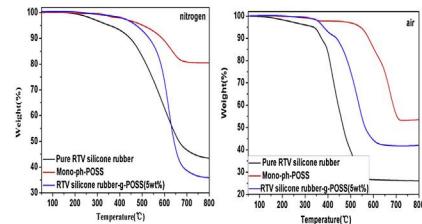
Kihyun Kim^a, Aleya Hasneen^b, Hyun-jong Paik^{b,**}, Taihyun Chang^{a,*}^a Department of Chemistry and Division of Advanced Materials Science, Pohang University of Science and Technology (POSTECH), Pohang 790-784, Republic of Korea^b Department of Polymer Science and Engineering, Pusan National University, Busan 609-735, Republic of Korea

Preparation and thermal degradation behavior of room temperature vulcanized silicone rubber-g-polyhedral oligomeric silsesquioxanes

pp 6140–6149

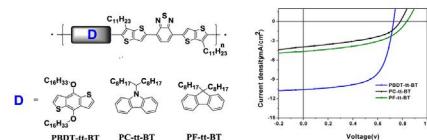
Yufeng Liu, Yunhui Shi, Dian Zhang, Jiali Li, Guangsu Huang*

College of Polymer Science and Engineering, State Key Laboratory of Polymer Materials Engineering, Sichuan University, Chengdu 610065, People's Republic of China



Synthesis and photovoltaic properties of D-π-A copolymers based on thieno[3,2-b]thiophene bridge unit

pp 6150–6157

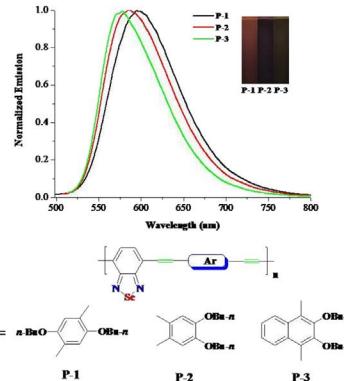
Zhaojun Li^{a,b}, Lijun Huo^{b,*}, Xia Guo^b, Weina Yong^b, Shaoqing Zhang^{a,b}, Huili Fan^{a,**}^aUniversity of Science and Technology Beijing, School of Chemistry and Biology, Beijing 100083, China^bState Key Laboratory of Polymer Physics and Chemistry, Beijing National Laboratory for Molecular Sciences Institute of Chemistry, Chinese Academy of Sciences, Beijing 100190, China

Synthesis, optical and electrochemical properties of novel D-π-A type conjugated polymers based on benzo[c][1,2,5]selenadiazole unit via alkyne module

pp 6158–6164

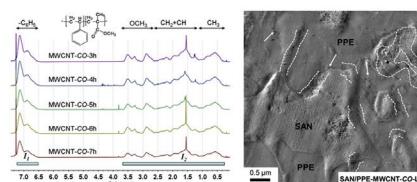
Duanqin Li, Hui Li, Miaochang Liu, Jiuxi Chen, Jinchang Ding, Xiaobo Huang*, Huayue Wu*

College of Chemistry & Materials Engineering, Wenzhou University, Wenzhou 325035, PR China



Functionalization of MWCNT with P(MMA-co-S) copolymers via ATRP: Influence on localization of MWCNT in SAN/PPE 40/60 blends and on rheological and dielectric properties of the composites

pp 6165–6176

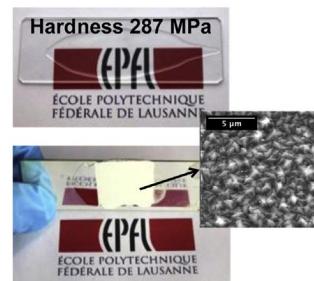
Bing Du^a, Ulrich A. Handge^a, Mona Wambach^a, Clarissa Abetz^a, Sofia Rangou^a, Volker Abetz^{a,b,*}^aInstitute of Polymer Research, Helmholtz-Zentrum Geesthacht, Max-Planck-Strasse 1, 21502 Geesthacht, Germany^bInstitute of Physical Chemistry, University of Hamburg, Grindelallee 117, 20146 Hamburg, Germany

Superhard transparent hybrid nanocomposites for high fidelity UV-nanoimprint lithography

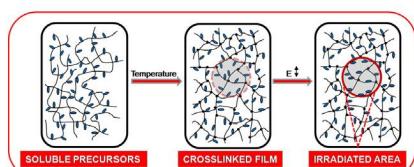
pp 6177–6183

Marina A. González Lazo, Maïté Blank, Yves Leterrier*, Jan-Anders E. Månsen

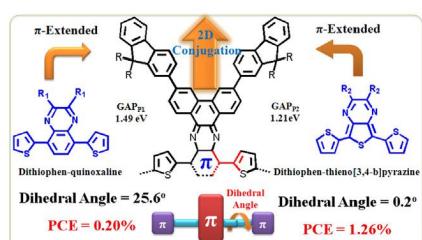
Laboratoire de Technologie des Composites et Polymères (LTC), Ecole Polytechnique Fédérale de Lausanne (EPFL), CH-1015 Lausanne, Switzerland

**A simple strategy to generate light-responsive azobenzene-containing epoxy networks**

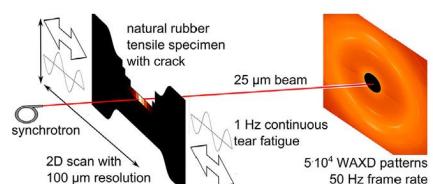
pp 6184–6190

Antonela B. Orofino^a, Gustavo Arenas^b, Ileana Zucchi^a, María J. Galante^a, Patricia A. Oyanguren^{a,*}^a Nanostructured Polymers Group – Institute of Materials Science and Technology (INTEMA), University of Mar del Plata and National Research Council (CONICET), J. B. Justo 4302, 7600 Mar del Plata, Argentina^b Laser Laboratory, Department of Physics, University of Mar del Plata and National Research Council (CONICET), J.B. Justo 4302, 7600 Mar del Plata, Argentina**Highly π-extended polymers based on phenanthro-pyrazine: Synthesis, characterization, theoretical calculation and photovoltaic properties**

pp 6191–6199

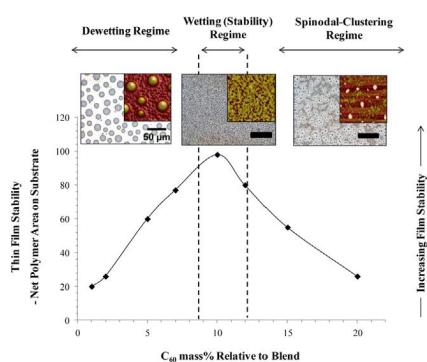
Zhiming Wang^{a,b}, Zhao Gao^a, Ying Feng^b, Yulong Liu^a, Bing Yang^a, Dandan Liu^a, Ying Lv^a, Ping Lu^{a,*}, Yuguang Ma^a^a State Key Laboratory of Supramolecular Structure and Materials, Jilin University, Changchun 130012, People's Republic of China^b School of Petrochemical Engineering, Shenyang University of Technology, Liaoyang 111003, People's Republic of China**Strain-induced crystallization around a crack tip in natural rubber under dynamic load**

pp 6200–6205

Karsten Brüning^{a,b,*}, Konrad Schneider^a, Stephan V. Roth^c, Gert Heinrich^{a,b}^a Leibniz-Institut für Polymerforschung Dresden e.V., Hohe Str. 6, 01069 Dresden, Germany^b Technische Universität Dresden, Institut für Werkstoffwissenschaft, Helmholtzstr. 7, 01069 Dresden, Germany^c Deutsches Elektronen-Synchrotron (DESY), Notkestr. 85, 22607 Hamburg, Germany

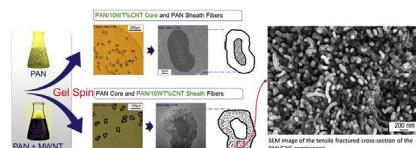
Spinodal clustering induced dewetting and non-monotonic stabilization of polymer blend films at high nanofiller concentrations

pp 6206–6209

Diya Bandyopadhyay^a, Danielle Grolman^a, Gurpreet Singh^a, Jack F. Douglas^b, Alamgir Karim^{a,*}^a Department of Polymer Engineering, The University of Akron, Akron, OH 44325, United States^b Polymers Division, National Institute of Standards and Technology, Gaithersburg, MD 20899, United States

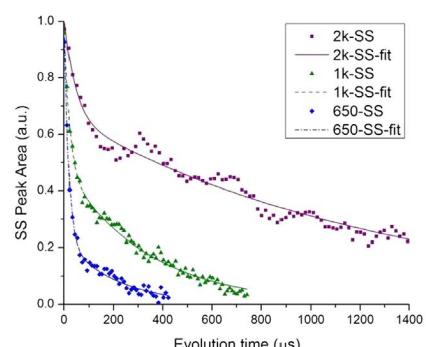
Functional polymer–polymer/carbon nanotube bi-component fibers

pp 6210–6217

An-Ting Chien^a, Prabhakar V. Gulgulje^a, Han Gi Chae^a, Aniruddha S. Joshi^b, Jaeyun Moon^b, Bo Feng^b, G.P. Peterson^b, Satish Kumar^{a,*}^a School of Materials Science and Engineering, Georgia Institute of Technology, Atlanta, GA 30332-0295, USA^b George W. Woodruff School of Mechanical Engineering, Georgia Institute of Technology, Atlanta GA 30332-0405, USA

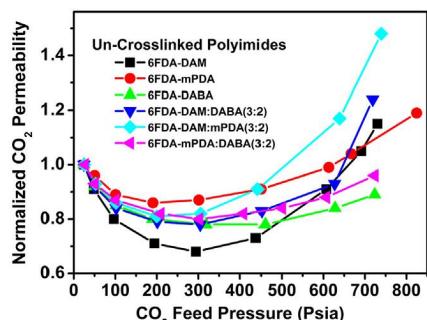
Phase-mixing and molecular dynamics in poly(urethane urea) elastomers by solid-state NMR

pp 6218–6225

Weiguo Hu^{a,*}, Alex J. Hsieh^b^a University of Massachusetts, Department of Polymer Science & Engineering, Amherst, MA 01003, USA^b U.S. Army Research Laboratory, RDRL-WMM-G, Aberdeen Proving Ground, MD 21005-5069, USA

Gas separation performance of 6FDA-based polyimides with different chemical structures

pp 6226–6235

Wulin Qiu^a, Liren Xu^a, Chien-Chiang Chen^a, Donald R. Paul^b, William J. Koros^{a,*}^a School of Chemical and Biomolecular Engineering, Georgia Institute of Technology, 778 Atlantic Drive, Atlanta, GA 30332-0100, USA^b Department of Chemical Engineering and Texas Materials Institute, The University of Texas at Austin, Austin, TX 78712, USA

Binary solvent mixture-induced crystallization enhancement for a white emissive polyfluorene copolymer toward improving its electroluminescence

pp 6236–6241

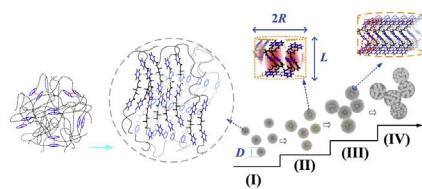
Lihui Liu, Keqi Wu, Junqiao Ding, Baohua Zhang*, Zhiyuan Xie*

State Key Laboratory of Polymer Physics and Chemistry, Changchun Institute of Applied Chemistry, University of Chinese Academy of Sciences, Chinese Academy of Sciences, Changchun 130022, PR China



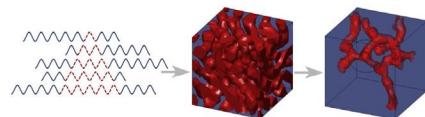
Formation of mesomorphic domains associated with dimer aggregates of phenyl rings in cold crystallization of poly(trimethylene terephthalate)

pp 6242–6252

Jian-Bang Jheng^a, Wei-Tsung Chuang^{b,*}, Po-Da Hong^{a,*}, Yen-Chih Huang^b, U-Ser Jeng^b, Chun-Jen Su^b, Guan-Rong Pan^c^a Department of Materials Science and Engineering, National Taiwan University of Science and Technology, Taipei 10607, Taiwan, ROC^b National Synchrotron Radiation Research Center, Hsinchu 30076, Taiwan, ROC^c Biomaterials Section, Department of Raw Materials and Yarns, Taiwan Textile Research Institute, New Taipei City 23674, Taiwan, ROC

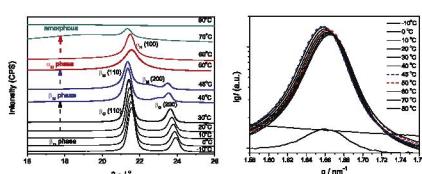
Enhancing composition window of bicontinuous structures by designed polydispersity distribution of ABA triblock copolymers

pp 6253–6260

Yue Li^a, Hu-Jun Qian^a, Zhong-Yuan Lu^{a,*}, An-Chang Shi^b^a State Key Laboratory of Theoretical and Computational Chemistry, Institute of Theoretical Chemistry, Jilin University, Changchun 130023, China^b Department of Physics and Astronomy, McMaster University, Hamilton, Ontario L8S 4M1, Canada

Chain packing and phase transition of N-hexacosylated polyethyleneimine comb-like polymer: A combined investigation by synchrotron X-ray scattering and FTIR spectroscopy

pp 6261–6266

Haifeng Shi^{a,*}, Haixia Wang^a, Yiping Yin^a, Guoming Liu^b, Xingxiang Zhang^a, Dujin Wang^b^a State Key Lab of Hollow Fiber Membrane Materials and Processes, Tianjin Municipal Key Lab of Fiber Modification and Functional Fiber, Institute of Functional Fibers, Tianjin Polytechnic University, Tianjin 300387, China^b Beijing National Laboratory for Molecular Sciences, CAS Key Laboratory of Engineering Plastics, Institute of Chemistry, Chinese Academy of Sciences, Beijing 100190, China

*Corresponding author

Available online at www.sciencedirect.com

ScienceDirect

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®



ISSN 0032-3861

Author Index

- Abetz, C. 6165
 Abetz, V. 6165
 Agneeswari, R. 6125
 Amigoni, S. 6089
 Arenas, G. 6184
 Bandyopadhyay, D. 6206
 Blank, M. 6177
 Brüning, K. 6200
 Cazacu, M. 6096
 Chae, H. G. 6210
 Chang, T. 6133
 Chen, C.-C. 6226
 Chen, J. 6158
 Chien, A.-T. 6210
 Chuang, W.-T. 6242
 Ding, J. 6158, 6236
 Douglas, J. F. 6206
 Du, B. 6165
 Etmimi, H. M. 6078
 Fan, H. 6150
 Feng, B. 6210
 Feng, Y. 6191
 Galante, M. J. 6184
 Gao, Z. 6191
 González Lazo, M. A. 6177
 Grolman, D. 6206
 Guittard, F. 6089
 Gulgunje, P. V. 6210
 Guo, X. 6150
 Handge, U. A. 6165
 Hara, M. 6053
 Hasneen, A. 6133
 Heinrich, G. 6200
 Hong, P.-D. 6242
 Hsieh, A. J. 6218
 Hu, W. 6218
 Huang, G. 6140
 Huang, X. 6158
 Huang, Y.-C. 6242
 Huo, L. 6150
 Hwang, D.-H. 6125
 Hyun, M. H. 6125
 Iván, B. 6073
 Jeng, U.-S. 6242
 Jheng, J.-B. 6242
 Jiang, Z. 6105
 Joshi, A. S. 6210
 Josse, D. 6089
 Kang, J.-W. 6125
 Karim, A. 6206
 Kim, J. 6119
 Kim, K. 6133
 Koros, W. J. 6226
 Kumar, S. 6210
 Leterrier, Y. 6177
 Li, D. 6158
 Li, G. 6119
 Li, H. 6158
 Li, J. 6140
 Li, Y. 6253
 Li, Z. 6150
 Liu, D. 6191
 Liu, G. 6261
 Liu, L. 6236
 Liu, M. 6158
 Liu, Y. 6140, 6191
 Lu, P. 6191
 Lu, Z.-Y. 6253
 Lv, Y. 6191
 Ma, Y. 6191
 Mallon, P. E. 6078
 Månsen, J.-A. E. 6177
 Moon, J. 6210
 Nagano, S. 6053
 Orofino, A. B. 6184
 Oyanguren, P. A. 6184
 Paik, H.-j. 6133
 Pan, G.-R. 6242
 Park, S.-B. 6114
 Paul, D. R. 6226
 Peterson, G. P. 6210
 Qian, H.-J. 6253
 Qiu, W. 6226
 Racles, C. 6096
 Rangou, S. 6165
 Roth, S. V. 6200
 Sakamoto, J. 6114
 Schneider, K. 6200
 Seki, T. 6053
 Shi, A.-C. 6253
 Shi, H. 6261
 Shi, Y. 6140
 Shova, S. 6096
 Singh, G. 6206
 Song, M. 6125
 Su, C.-J. 6242
 Sung, M.-H. 6114
 Szanka, A. 6073
 Szarka, G. 6073
 Taffin de Givenchy, E. 6089
 Tamilavan, V. 6125
 Timpu, D. 6096
 Uyama, H. 6114
 Wambach, M. 6165
 Wang, D. 6261
 Wang, H. 6261
 Wang, Z. 6191
 Wu, H. 6158
 Wu, K. 6236
 Xie, Z. 6236
 Xu, L. 6226
 Yang, B. 6191
 Yin, Y. 6261
 Yong, W. 6150
 Youk, J. H. 6119
 Yu, Y. C. 6119
 Zenerino, A. 6089
 Zhang, B. 6236
 Zhang, D. 6140
 Zhang, J. 6105
 Zhang, S. 6150
 Zhang, X. 6261
 Zucchi, I. 6184