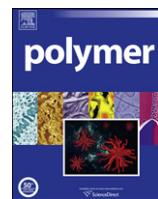




Contents lists available at ScienceDirect

Polymer

journal homepage: www.elsevier.com/locate/polymer



Polymer Vol. 50, No. 6, 6 March 2009

Contents

FEATURE ARTICLE

Uneven distribution of nanoparticles in immiscible fluids: Morphology development in polymer blends

pp 1333–1350

F. Fenouillot^{a, b, c, *}, P. Cassagnau^{a, b, d}, J.-C. Majesté^{a, b, e}

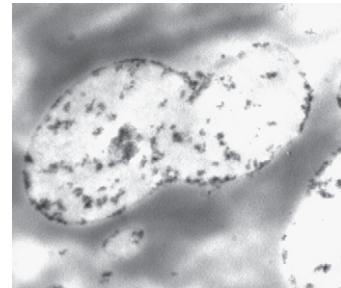
^a Université de Lyon, F-69003 Lyon, France

^b CNRS, UMR5223, Ingénierie des Matériaux Polymères, France

^c INSA-Lyon, F-69621 Villeurbanne, France

^d Université Lyon 1, F-69622 Villeurbanne, France

^e Université de Saint-Etienne, F-42000 Saint-Etienne, France



POLYMER PAPERS

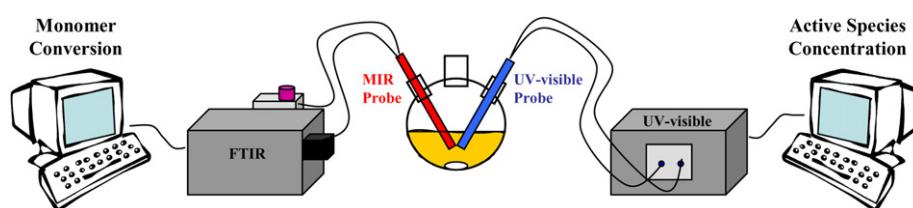
***In situ* mid-IR and UV-visible spectroscopies applied to the determination of kinetic parameters in the anionic copolymerization of styrene and isoprene**

pp 1351–1357

Sébastien Quinebèche^a, Christophe Navarro^b,
Yves Gnanou^{a, *}, Michel Fontanille^{a, *}

^a Laboratoire de Chimie des Polymères Organiques, Université Bordeaux-1/ENSCPB/CNRS,
16, Av. Pey-Berland, 33607 PESSAC, France

^b Arkema France, Groupement de Recherches
de Lacq, 64170, LACQ, France



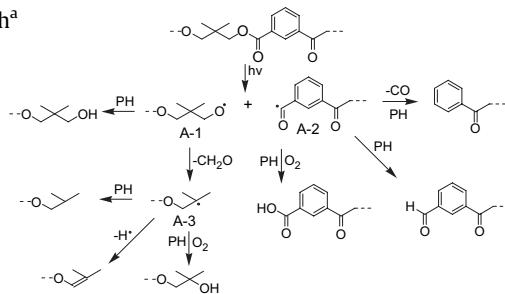
Molecular mechanism of photolysis and photooxidation of poly(neopentyl isophthalate)**pp 1358–1368**

Przemyslaw Malanowski^{a,c}, Saskia Huijser^b, Francesca Scalfro^{a,c},
Rolf A.T.M. van Benthem^{a,*}, Leendert G.J. van der Ven^a, Jozua Laven^a, Gijsbertus de With^a

^a Laboratory of Materials and Interface Chemistry, Eindhoven University of Technology,
P.O. Box 513, 5600 MB Eindhoven, The Netherlands

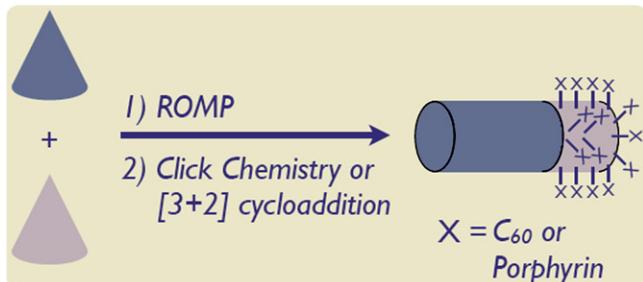
^b Laboratory of Polymer Chemistry, Eindhoven University of Technology,
P.O. Box 513, 5600 MB Eindhoven, The Netherlands

^c Dutch Polymer Institute (DPI), P.O. Box 902, 5600 AX Eindhoven, The Netherlands

**Synthesis, characterization and modification of azide-containing dendronized diblock copolymers****pp 1369–1377**

Erika Fiset, Jean-François Morin*

Department of Chemistry, Centre de recherche sur les matériaux avancés (CERMA), 1045 Ave. de la Médecine, Pavillon Alexandre-Vachon, Université Laval, Québec, QC, Canada G1V 0A6

**A supramolecular gene carrier composed of multiple cationic α -cyclodextrins threaded on a PPO–PEO–PPO triblock polymer****pp 1378–1388**

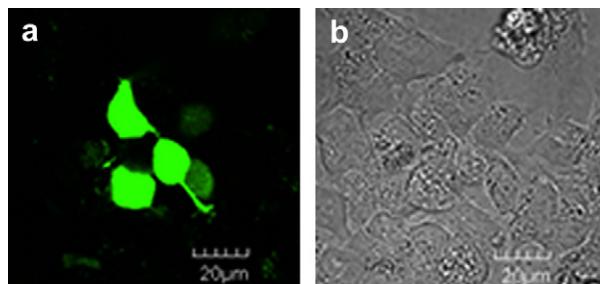
Chuan Yang^a, Xin Wang^b, Hongzhe Li^b, Jeak Ling Ding^c, De Yun Wang^d, Jun Li^{a,b,*}

^a Division of Bioengineering, Faculty of Engineering, National University of Singapore, 7 Engineering Drive 1, Singapore 117574, Singapore

^b Institute of Materials Research and Engineering, A*STAR (Agency for Science, Technology and Research), 3 Research Link, Singapore 117602, Singapore

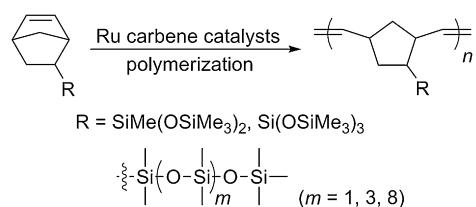
^c Department of Biological Science, National University of Singapore, 14 Science Drive 4, Singapore 117543, Singapore

^d Department of Otolaryngology, National University of Singapore, 5 Lower Kent Ridge Road, Singapore 119074, Singapore

**Synthesis and properties of polynorbornenes bearing oligomeric siloxane pendant groups****pp 1389–1394**

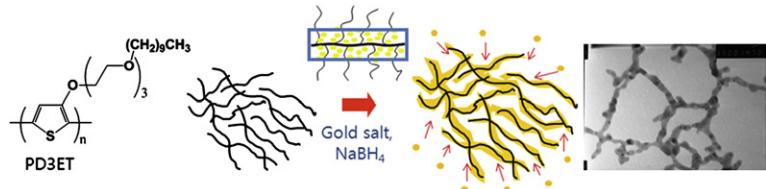
Toru Katsumata, Masashi Shiotsuki, Fumio Sanda, Toshio Masuda*

Department of Polymer Chemistry, Graduate School of Engineering, Kyoto University, Katsura Campus, Nishikyo-ku, Kyoto 615-8510, Japan



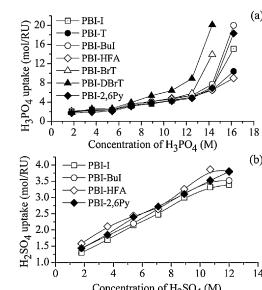
Amphiphilic polythiophene for the formation of gold nanowire networks**pp 1395–1402**

Young-Sik Yoon, Hae-Sung Sohn, Jong-Chan Lee*

Department of Chemical and Biological Engineering,
Seoul National University, 599 Gwanangno, Gwanak-Gu,
Seoul 151-744, Republic of Korea**Variation in acid moiety of polybenzimidazoles: Investigation of physico-chemical properties towards their applicability as proton exchange and gas separation membrane materials****pp 1403–1413**

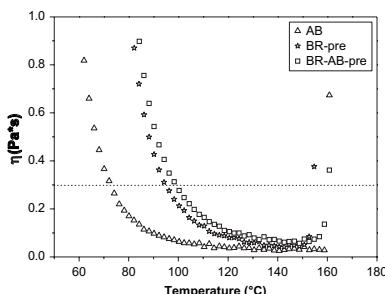
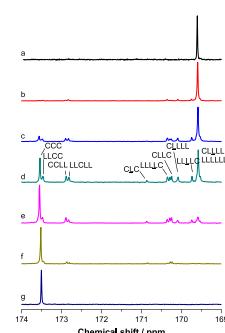
S.C. Kumbharkar, Md. Nazrul Islam, R.A. Potrekar, U.K. Kharul*

Polymer Science and Engineering Division, National Chemical Laboratory, Dr. Homi Bhabha Road, Pune 411008, Maharashtra, India

**Synthesis, preparation and properties of novel high-performance allyl-maleimide resins****pp 1414–1422**

Haoyu Tang, Wanwan Li, Xinghe Fan*, Xiaofang Chen, Zhihao Shen*, Qifeng Zhou*

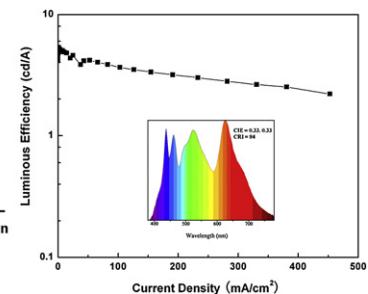
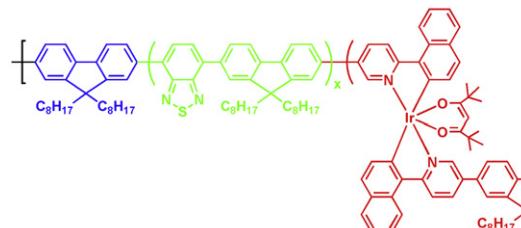
Beijing National Laboratory for Molecular Sciences, Key Laboratory of Polymer Chemistry and Physics of Ministry of Education, College of Chemistry and Molecular Engineering, Peking University, Beijing 100871, China

**Microstructure analysis and thermal properties of L-lactide/ε-caprolactone copolymers obtained with magnesium octoate****pp 1423–1429**Zhiyong Wei^{a, b, c, *}, Lian Liu^{a, *}, Chao Qu^a, Min Qi^b^a Department of Materials Science and Engineering, Dalian Maritime University, No. 1 Linghai Road, Dalian 116026, PR China^b School of Materials Science and Engineering, Dalian University of Technology, Dalian 116024, PR China^c School of Automotive Engineering, Dalian University of Technology, Dalian 116024, PR China

Novel white-light-emitting polyfluorenes with benzothiadiazole and Ir complex on the backbone**pp 1430–1437**

Qiliang Chen, Nanliu Liu, Lei Ying, Wei Yang*, Hongbin Wu, Wei Xu, Yong Cao*

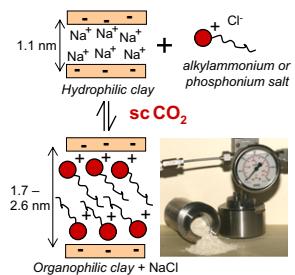
Institute of Polymer Optoelectronic Materials and Devices, South China University of Technology, Key Laboratory of Specially Functional Materials, Ministry of Education, Guangzhou 510640, China

**Supercritical CO₂ as an efficient medium for layered silicate organomodification: Preparation of thermally stable organoclays and dispersion in polyamide 6****pp 1438–1446**Elodie Naveau^a, Cédric Calberg^b, Christophe Detrembleur^a, Serge Bourbigot^c, Christine Jérôme^{a,*}, Michaël Alexandre^a

^a Center for Education and Research on Macromolecules (CERM), University of Liège, Sart-Tilman, B6a, B-4000 Liège, Belgium

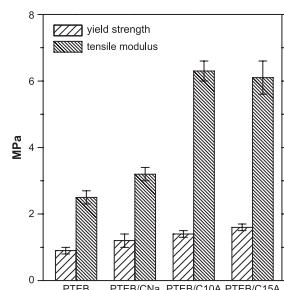
^b Laboratoire de Chimie Industrielle (CIOR), University of Liège, Sart-Tilman, B6a, B-4000 Liège, Belgium

^c Procédés d'Elaboration de Revêtements Fonctionnels, UMR/CNRS 8008, ENSCL, BP 90108, 59652 Villeneuve d'Ascq cedex, France

**Effect of the intercalated/exfoliated nanostructure on the phase transformations of smectic polyester/layered silicate hybrids: Reinforcement of the liquid-crystalline matrix****pp 1447–1455**A. Martínez-Gómez^{a,1}, E. Pérez^b, C. Álvarez^{b,*}

^a ETS de Ingenieros Industriales, Universidad Politécnica de Madrid, José Gutiérrez Abascal 2, 28006 Madrid, Spain

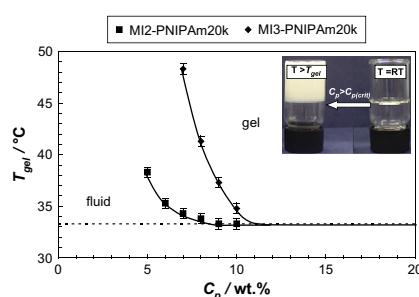
^b Instituto de Ciencia y Tecnología de Polímeros, CSIC, Juan de la Cierva 3, 28006 Madrid, Spain

**A study of thermoassociative gelation of aqueous cationic poly(*N*-isopropyl acrylamide) graft copolymer solutions****pp 1456–1462**R. Liu^{a,b}, F. Cellesi^c, N. Tirelli^c, B.R. Saunders^{a,*}

^a Polymer Science and Technology Group, The School of Materials, The University of Manchester, Grosvenor Street, Manchester M1 7HS, UK

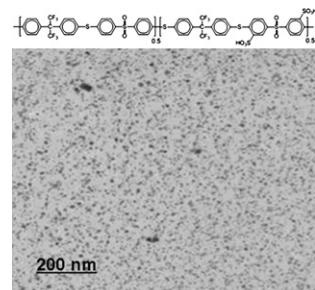
^b School of Material and Chemical Engineering, Zhengzhou University of Light Industry, Zhengzhou 450002, P.R. China

^c Laboratory of Polymers and Biomaterials, School of Pharmacy, The University of Manchester, Oxford Road, Manchester M13 9PT, UK



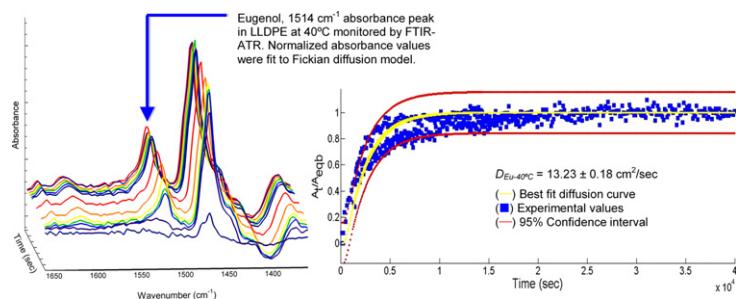
Fluorinated poly(arylenethioethersulfone) copolymers containing pendant sulfonic acid groups for proton exchange membrane materials

pp 1463–1469

Zongwu Bai^{a,*}, Joseph A. Shumaker^a, Marlene D. Houtz^a, Peter A. Mirau^b, Thuy D. Dang^{b,**}^a University of Dayton Research Institute, University of Dayton, 300 College Park Drive, Dayton, OH 45469, USA^b Air Force Research Laboratory/RXBP, Materials and Manufacturing Directorate, Wright-Patterson Air Force Base, OH 45433, USA

Determination of eugenol diffusion through LLDPE using FTIR-ATR flow cell and HPLC techniques

pp 1470–1482

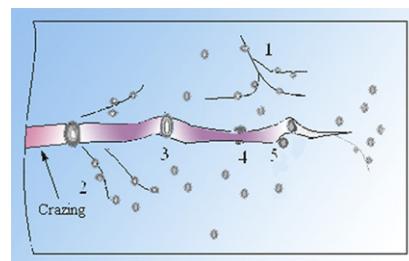
G. Dhoot^a, R. Auras^{a,*}, M. Rubino^a, K. Dolan^b, H. Soto-Valdez^c^a School of Packaging, Michigan State University, East Lansing, MI 48824-1223, United States^b Biosystems and Agricultural Engineering, Michigan State University, East Lansing, MI 48824-1223, United States^c Centro de Investigación en Alimentación y Desarrollo A.C., Hermosillo, Sonora 83000, Mexico

Effects of reactive compatibilizer on the core–shell structured modifiers toughening of poly(trimethylene terephthalate)

pp 1483–1490

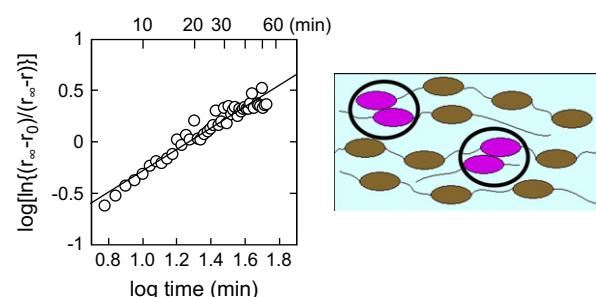
Kunyan Wang, Yanmo Chen*, Yu Zhang

State Key Laboratory for Modification of Chemical Fibers and Polymer Materials, College of Material Science and Engineering, Donghua University, Shanghai 201620, PR China



Dynamic process of cold crystallization of poly(butylene terephthalate) solids revealed by fluorescence spectroscopy

pp 1491–1496

Hideyuki Itagaki^{a,b,*}, Shuuichi Arakawa^b^a Department of Chemistry, Graduate School of Electronic Science and Technology, Shizuoka University, 836 Ohya, Suruga-ku, Shizuoka 422-8529, Japan^b Department of Chemistry, School of Education, Shizuoka University, 836 Ohya, Suruga-ku, Shizuoka 422-8529, Japan

Anomalous molecular orientation of isotactic polypropylene sheet containing *N,N'*-dicyclohexyl-2,6-naphthalenedicarboxamide

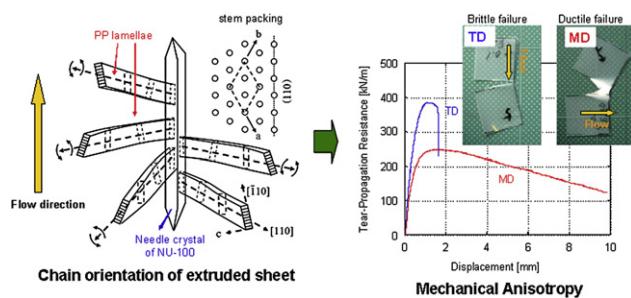
pp 1497–1504

Masayuki Yamaguchi^{a,*}, Takashi Fukui^a, Kenzo Okamoto^a, Shintaro Sasaki^b, Yohei Uchiyama^{a,c}, Chiaki Ueoka^c

^a School of Materials Science, Japan Advanced Institute of Science and Technology, 1-1 Asahidai, Nomi, Ishikawa 923-1292, Japan

^b Center for Nano Materials and Technology, Japan Advanced Institute of Science and Technology, 1-1 Asahidai, Nomi, Ishikawa 923-1292, Japan

^c New Japan Chemical Co., Ltd., 13 Yoshijima, Yaguracho, Fushimi, Kyoto 612-8224, Japan



Preparation and nonisothermal crystallization behavior of polypropylene/layered double hydroxide nanocomposites

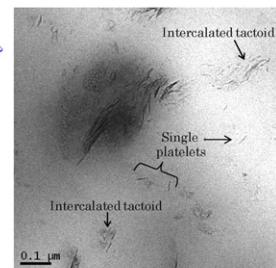
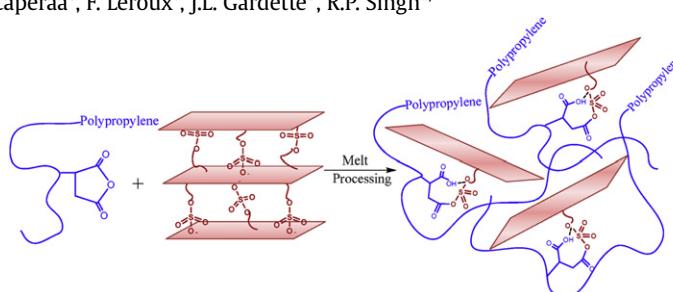
pp 1505–1515

Sunil P. Lonkar^{a,b}, S. Morlat-Therias^b, N. Caperaa^c, F. Leroux^c, J.L. Gardette^b, R.P. Singh^{a,*}

^a Division of Polymer Science and Engineering, National Chemical Laboratory, Pune 411 008, India

^b Laboratoire de Photochimie Moléculaire et Macromoléculaire (UMR CNRS-UBP 6505), Université Blaise Pascal (Clermont II), 63170 Aubière, France

^c Laboratoire des Matériaux Inorganiques (UMR CNRS-UBP 6002), Université Blaise Pascal (Clermont II), 63170 Aubière, France



Self-association and microenvironment of random amphiphilic copolymers of sodium *N*-acryloyl-*L*-valinate and *N*-dodecylacrylamide in aqueous solution

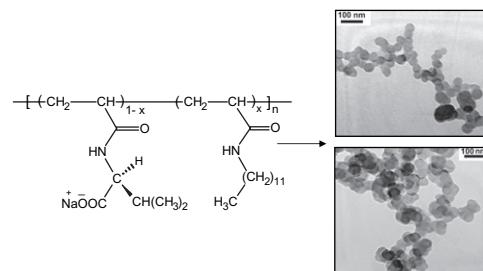
pp 1516–1525

Pranabesh Dutta^a, Joykrishna Dey^{a,*}, Goutam Ghosh^b, Rati Ranjan Nayak^c

^a Department of Chemistry, Indian Institute of Technology, Kharagpur 721302, India

^b UGC-DAE Consortium for Scientific Research, BARC, Trombay, Mumbai 400 085, India

^c Department of Polymer Chemistry, Kyoto University, Katsura, Nishikyo-ku, Kyoto 615 8510, Japan

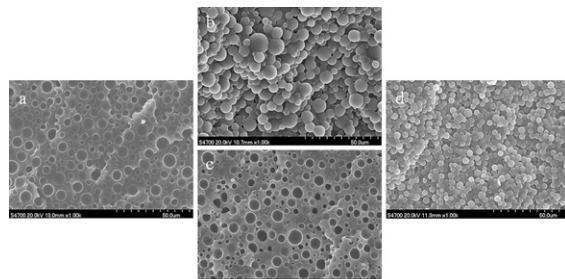


Porous epoxy monolith prepared via chemically induced phase separation

pp 1526–1532

Jianhua Li, Zhongjie Du, Hangquan Li, Chen Zhang*

The Key Laboratory of Beijing City on Preparation and Processing of Novel Polymer Materials, Beijing University of Chemical Technology, No. 15, BeiSanhuan East Road, Chaoyang District, Beijing 100029, PR China

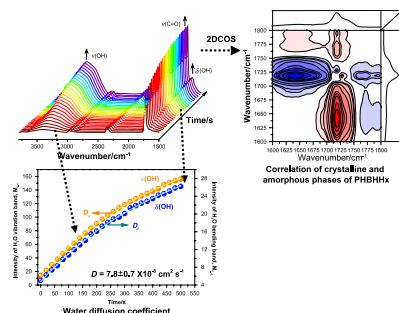


Investigation of water diffusion in poly(3-hydroxybutyrate-co-3-hydroxyhexanoate) by generalized two-dimensional correlation ATR-FTIR spectroscopy

pp 1533–1540

Hua-Xiao Yang, Min Sun, Ping Zhou*

The Key Laboratory of Molecular Engineering of Polymers, Ministry of Education, Department of Macromolecular Science, Fudan University, 220 Handan Road, Shanghai 200433, PR China

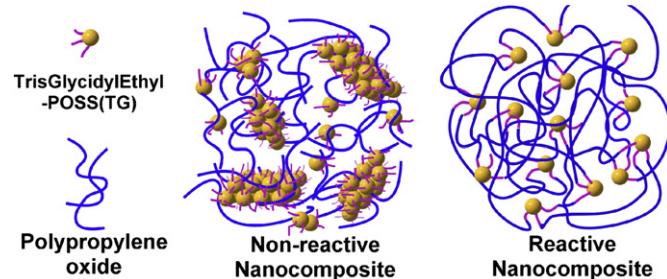


Effect of side chain architecture on dielectric relaxation in polyhedral oligomeric silsesquioxane/polypropylene oxide nanocomposites

pp 1541–1547

Yu Bian, Jovan Mijović*

Othmer-Jacobs Department of Chemical and Biological Engineering,
Polytechnic Institute of New York University, Six Metrotech Center,
Brooklyn, NY 11201, USA



Electrospun 1,6-diisocyanatohexane-extended poly(1,4-butylene succinate) fiber mats and their potential for use as bone scaffolds

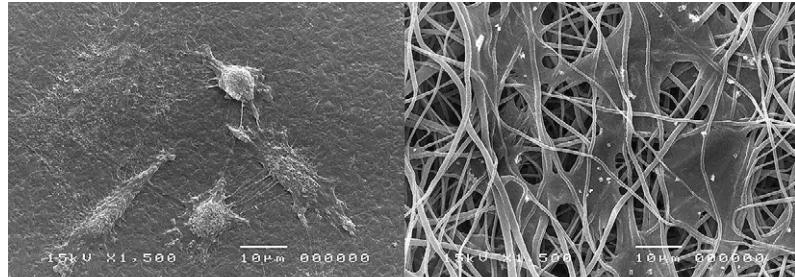
pp 1548–1558

Sasipim Sutthiphong^{a,b}, Prasit Pavaasant^c, Pitt Supaphol^{a,b,*}

^a The Petroleum and Petrochemical College,
Chulalongkorn University, Pathumwan, Bangkok,
Thailand

^b The Center for Petroleum, Petrochemicals and
Advanced Materials, Chulalongkorn University,
Pathumwan, Bangkok, Thailand

^c Department of Anatomy, Faculty of Dentistry,
Chulalongkorn University, Bangkok, Thailand

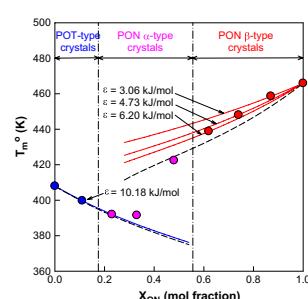


Structures and cocrystallization behavior of copolymers based on poly(octamethylene terephthalate) and poly(octamethylene 2,6-naphthalate)

pp 1559–1565

Young Gyu Jeong*, Jong Hyun Lee, Sang Cheol Lee

School of Advanced Materials and System Engineering, Kumoh National Institute of Technology, Gumi,
Gyeongbuk 730-701, Republic of Korea



Ultra small-angle X-ray scattering studies on structural changes in micrometers upon uniaxial stretching of segmented polyurethaneureas

pp 1566–1576

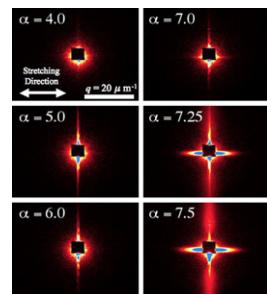
Shinichi Sakurai^{a,*}, Hidekazu Yoshida^a, Fumio Hashimoto^b, Miaki Shibaya^b, Hideaki Ishihara^{b,1}, Nori Yoshihara^c, Shotaro Nishitsuji^d, Mikihito Takenaka^d

^a Department of Polymer Science and Engineering, Graduate School of Science and Technology, Kyoto Institute of Technology, Matsugasaki, Sakyo-ku, Kyoto 606-8585, Japan

^b Division of Advanced Fibro-Science, Graduate School of Science and Technology, Kyoto Institute of Technology, Matsugasaki, Sakyo-ku, Kyoto 606-8585, Japan

^c Research Center, Toyobo Co., Ltd, 2-1-1 Katata, Otsu, Shiga 520-0292, Japan

^d Department of Polymer Chemistry, Graduate School of Engineering, Kyoto University, Katsura, Kyoto 615-8510, Japan



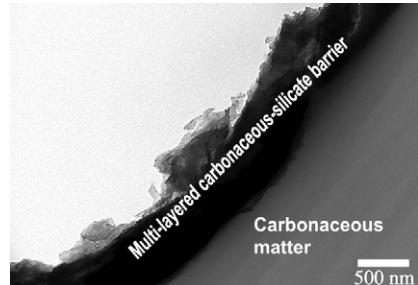
Roles of graphite oxide, clay and POSS during the combustion of polyamide 6

pp 1577–1587

Aravind Dasari^{a,1}, Zhong-Zhen Yu^{b,*}, Yiu-Wing Mai^a, Guipeng Cai^a, Huaihe Song^b

^a Centre for Advanced Materials Technology (CAMT), School of Aerospace, Mechanical and Mechatronic Engineering (J07), The University of Sydney, Sydney, NSW 2006, Australia

^b Beijing Key Laboratory on Preparation and Processing of Novel Polymeric Materials, Department of Polymer Engineering, College of Materials Science and Engineering, Beijing University of Chemical Technology, Beijing 100029, China



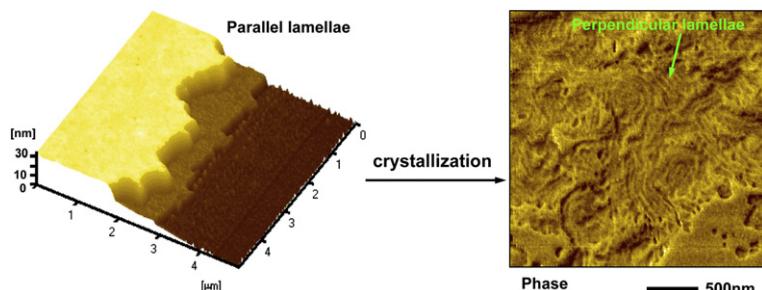
Lamella reorientation in thin films of a symmetric poly(L-lactic acid)-block-polystyrene upon crystallization at different temperatures

pp 1588–1595

Jun Fu^a, Yuhang Wei^a, Longjian Xue^a, Bin Luan^b, Caiyuan Pan^b, Binyao Li^a, Yanchun Han^{a,*}

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

^b Department of Polymer Science and Engineering, University of Science and Technology of China, Hefei 230026, PR China

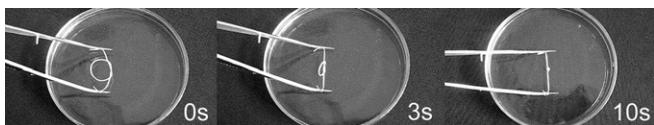


A novel type of shape memory polymer blend and the shape memory mechanism

pp 1596–1601

Heng Zhang, Haitao Wang, Wei Zhong*, Qiangguo Du*

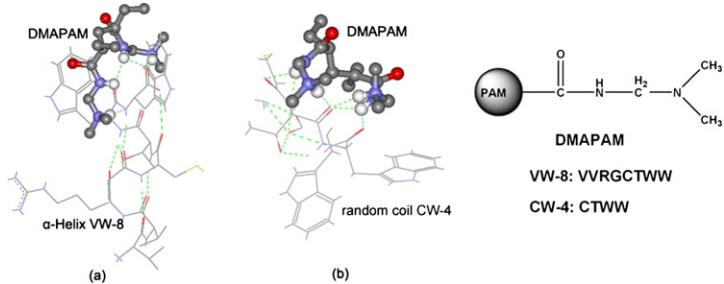
Key Laboratory of Molecular Engineering of Polymers of Ministry of Education, Department of Macromolecular Science, Fudan University, Shanghai 200433, China



Affinity adsorption mechanism studies of adsorbents for oligopeptides using model polymer**pp 1602-1608**

Jihong Li, Jing Feng, Qinjin Dang, Yitao Qiao, Jianxin Zhao,
Saihui Zhang, Hongwei Sun, Xin Wen, Zhi Yuan*

College of Chemistry, Key Laboratory of Functional Polymer Materials, Ministry of Education, Nankai University,
Tianjin 300071, China



*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®



ISSN 0032-3861

Author Index

- Alexandre, M. 1438
 Álvarez, C. 1447
 Arakawa, S. 1491
 Auras, R. 1470
- Bai, Z. 1463
 Bian, Y. 1541
 Bourbigot, S. 1438
- Cai, G. 1577
 Calberg, C. 1438
 Cao, Y. 1430
 Caperaa, N. 1505
 Cassagnau, P. 1333
 Cellesi, F. 1456
 Chen, Q. 1430
 Chen, X. 1414
 Chen, Y. 1483
- Dang, Q. 1602
 Dang, T. D. 1463
 Dasari, A. 1577
 de With, G. 1358
 Detrembleur, C. 1438
 Dey, J. 1516
 Dhoot, G. 1470
 Dolan, K. 1470
 Du, Q. 1596
 Du, Z. 1526
 Dutta, P. 1516
- Fan, X. 1414
 Feng, J. 1602
 Fenouillot, F. 1333
 Fiset, E. 1369
 Fontanille, M. 1351
 Fu, J. 1588
 Fukui, T. 1497
- Gardette, J. L. 1505
 Ghosh, G. 1516
 Gnanou, Y. 1351
- Han, Y. 1588
 Hashimoto, F. 1566
 Houtz, M. D. 1463
 Huijser, S. 1358
- Ishihara, H. 1566
 Islam, M. N. 1403
 Itagaki, H. 1491
- Jeong, Y. G. 1559
 Jérôme, C. 1438
- Katsumata, T. 1389
 Kharul, U. K. 1403
 Kumbharkar, S. C. 1403
- Laven, J. 1358
 Lee, J. H. 1559
 Lee, J.-C. 1395
 Lee, S. C. 1559
 Leroux, F. 1505
 Li, B. 1588
 Li, Hangquan 1526
 Li, Hongzhe 1378
 Li, Jianhua 1526
 Li, Jihong 1602
 Li, Jun 1378
 Li, W. 1414
 Ling Ding, J. 1378
 Liu, L. 1423
 Liu, N. 1430
 Liu, R. 1456
 Lonkar, S. P. 1505
 Luan, B. 1588
- Mai, Y.-W. 1577
 Majesté, J.-C. 1333
 Malanowski, P. 1358
 Martínez-Gómez, A. 1447
 Masuda, T. 1389
 Mijović, J. 1541
 Mirau, P. A. 1463
 Morin, J.-F. 1369
 Morlat-Therias, S. 1505
- Navarro, C. 1351
 Naveau, E. 1438
 Nayak, R. R. 1516
 Nishitsuji, S. 1566
- Okamoto, K. 1497
- Pan, C. 1588
 Pavasant, P. 1548
 Pérez, E. 1447
 Potrekar, R. A. 1403
- Qi, M. 1423
 Qiao, Y. 1602
 Qu, C. 1423
 Quinebèche, S. 1351
- Rubino, M. 1470
- Sakurai, S. 1566
 Sanda, F. 1389
 Sasaki, S. 1497
- Saunders, B. R. 1456
 Scaltro, F. 1358
 Shen, Z. 1414
 Shibaya, M. 1566
 Shiotsuki, M. 1389
 Shumaker, J. A. 1463
 Singh, R. P. 1505
 Sohn, H.-S. 1395
 Song, H. 1577
 Soto-Valdez, H. 1470
 Sun, H. 1602
 Sun, M. 1533
 Supaphol, P. 1548
 Sutthiphong, S. 1548
- Takenaka, M. 1566
 Tang, H. 1414
 Tirelli, N. 1456
- Uchiyama, Y. 1497
 Ueoka, C. 1497
- van Benthem, R. A. T. M. 1358
 van der Ven, L. G. J. 1358
- Wang, H. 1596
 Wang, K. 1483
 Wang, X. 1378
 Wei, Y. 1588
 Wei, Z. 1423
 Wen, X. 1602
 Wu, H. 1430
- Xu, W. 1430
 Xue, L. 1588
- Yamaguchi, M. 1497
 Yang, C. 1378
 Yang, H.-X. 1533
 Yang, W. 1430
 Ying, L. 1430
 Yoon, Y.-S. 1395
 Yoshida, H. 1566
 Yoshihara, N. 1566
 Yu, Z.-Z. 1577
 Yuan, Z. 1602
 Yun Wang, D. 1378
- Zhang, C. 1526
 Zhang, H. 1596
 Zhang, S. 1602
 Zhang, Y. 1483
 Zhao, J. 1602
 Zhong, W. 1596
 Zhou, P. 1533
 Zhou, Q. 1414