

**Polymer Vol. 50, No. 26, 10 December 2009**

**Contents**

**POLYMER COMMUNICATIONS**

**Microgel electrospinning: A novel tool for the fabrication of nanocomposite fibers**

pp 6193–6197

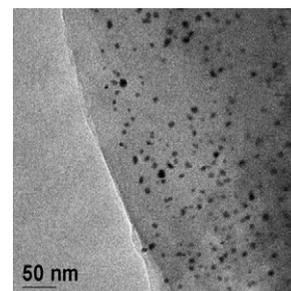
Silvia Piperno<sup>a</sup>, Levi A. Gheber<sup>a</sup>, Patrizia Canton<sup>b</sup>, Andrij Pich<sup>c</sup>, Gita Dvorakova<sup>d</sup>, Andrea Biffis<sup>d,\*</sup>

<sup>a</sup> Department of Biotechnology Engineering, Ben-Gurion University of the Negev, P.O.Box 653, Beer-Sheva 84105, Israel

<sup>b</sup> Dipartimento di Chimica Fisica, Università di Venezia Via Torino 155, I-30170 Venezia, Italy

<sup>c</sup> DWI an der RWTH Aachen eV, Pauwelsstr. 8, D-52056 Aachen, Germany

<sup>d</sup> Dipartimento di Scienze Chimiche, Università di Padova, via Marzolo 1, I-35131 Padova, Italy



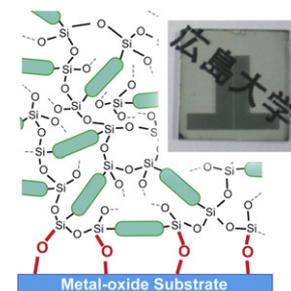
**Development of anchored oligothiophenes on substrates for the application to the tunable transparent conductive films**

pp 6198–6201

Ichiro Imae<sup>a,\*</sup>, Shotaro Takayama<sup>a</sup>, Daisuke Tokita<sup>a</sup>, Yousuke Ooyama<sup>a</sup>, Kenji Komaguchi<sup>a</sup>, Joji Ohshita<sup>a</sup>, Takashi Sugioka<sup>b</sup>, Koichi Kanehira<sup>b</sup>, Yutaka Harima<sup>a,\*</sup>

<sup>a</sup> Department of Applied Chemistry, Graduate School of Engineering, Hiroshima University, 1-4-1 Kagamiyama, Higashi-Hiroshima, Hiroshima 739-8527, Japan

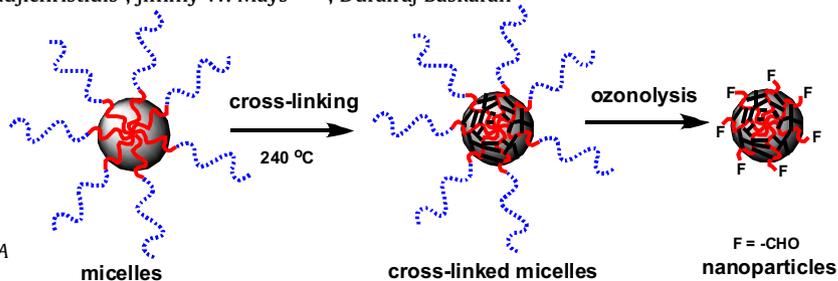
<sup>b</sup> Synthesis Research Laboratory, Kurashiki Research Center, Kuraray Co., Ltd., 2045-1 Sakazu, Kurashiki, Okayama 710-0801, Japan



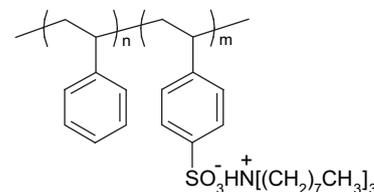
## POLYMER PAPERS

**Functionalized organic nanoparticles from core-crosslinked poly(4-vinylbenzocyclobutene-*b*-butadiene) diblock copolymer micelles**

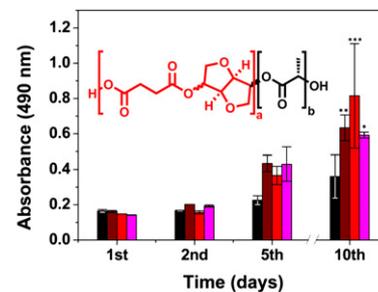
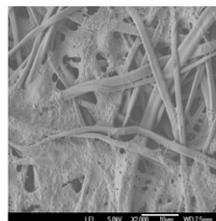
pp 6202–6211

Georgios Sakellariou<sup>a</sup>, Apostolos Avgeropoulos<sup>b</sup>, Nikos Hadjichristidis<sup>c</sup>, Jimmy W. Mays<sup>a,d,\*</sup>, Durairaj Baskaran<sup>a,\*</sup><sup>a</sup> Department of Chemistry, University of Tennessee, Knoxville, TN 37996, USA<sup>b</sup> Department of Materials Science and Engineering, University of Ioannina Administration Building, University Campus Dourouti, 45110 Ioannina, Greece<sup>c</sup> Department of Chemistry, University of Athens, Panepistimiopolis Zografou, 15771 Athens, Greece<sup>d</sup> Chemical Sciences Division and Center for Nanophase Materials Sciences, Oak Ridge National Laboratory, Oak Ridge, TN 37831, USA**Synthesis of poly(trioctylammonium *p*-styrenesulfonate) homopolymers and block copolymers by RAFT polymerization**

pp 6212–6217

Yuqing Liu<sup>a</sup>, Kevin L. Pollock<sup>b</sup>, Kevin A. Cavicchi<sup>a,\*</sup><sup>a</sup> Department of Polymer Engineering, The University of Akron, Akron, OH 44325-0301, USA<sup>b</sup> Department of Chemistry, Carleton College, Northfield, MN 55057, USA**Enhanced fibroblast adhesion and proliferation on electrospun fibers obtained from poly(isosorbide succinate-*b*-L-lactide) block copolymers**

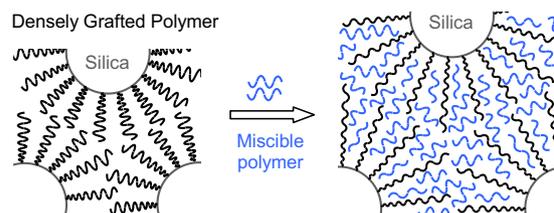
pp 6218–6227

Romeu Casarano<sup>a</sup>, Ricardo Bentini<sup>a</sup>, Vânia B. Bueno<sup>a</sup>, Talita Iacovella<sup>a,b</sup>, Fabiola B.F. Monteiro<sup>b</sup>, Fábio A.S. Iha<sup>a</sup>, Ana Campa<sup>b</sup>, Denise F.S. Petri<sup>a</sup>, Michael Jaffe<sup>c</sup>, Luiz H. Catalani<sup>a,\*</sup><sup>a</sup> Institute of Chemistry, University of São Paulo, São Paulo, Brazil<sup>b</sup> Faculty of Pharmaceutical Sciences, University of São Paulo, São Paulo, Brazil<sup>c</sup> Medical Device Concept Laboratory, New Jersey Institute of Technology, Newark, USA**Miscible blends of poly(butyl methacrylate) densely grafted on fumed silica with poly(vinyl chloride)**

pp 6228–6234

Kenichi Hayashida<sup>\*</sup>, Hiromitsu Tanaka, Osamu Watanabe

Organic Materials Research Lab, Toyota Central R&amp;D Labs., Inc., Nagakute, Aichi 480-1192, Japan

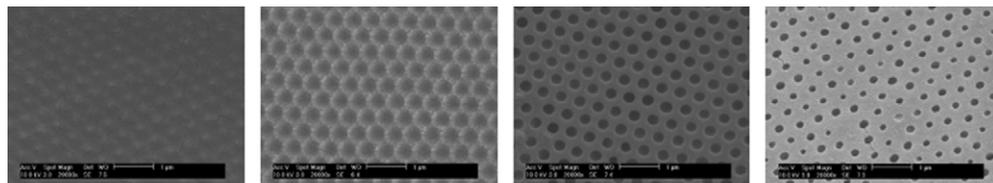


**A simple approach to fabricate morphological gradient on polymer surfaces**

pp 6235–6244

Shiling Zhang, Bo You, Guangxin Gu, Limin Wu\*

Department of Materials Science  
and the Advanced Coatings Research  
Center of China Educational Ministry,  
Advanced Materials Laboratory,  
Fudan University, Shanghai 200433,  
PR China

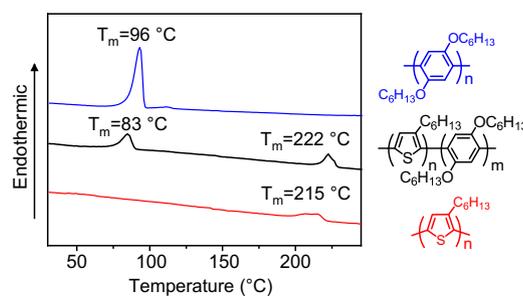
**Synthesis and characterization of phenylene-thiophene all-conjugated diblock copolymers**

pp 6245–6251

Shupeng Wu<sup>a,b</sup>, Laju Bu<sup>a,b</sup>, Li Huang<sup>a,b</sup>, Xinhong Yu<sup>a</sup>, Yanchun Han<sup>a</sup>,  
Yanhou Geng<sup>a,\*</sup>, Fosong Wang<sup>a</sup>

<sup>a</sup> State Key Laboratory of Polymer Physics and Chemistry, Changchun Institute of Applied  
Chemistry, Chinese Academy of Sciences, Changchun 130022, PR China

<sup>b</sup> Graduate School of Chinese Academy of Sciences, Beijing 100049, PR China

**Promoting carbonization of polypropylene during combustion through synergistic catalysis of a trace of halogenated compounds and Ni<sub>2</sub>O<sub>3</sub> for improving flame retardancy**

pp 6252–6258

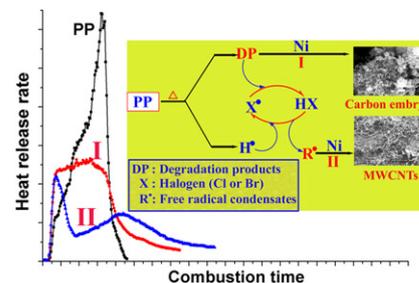
Haiou Yu<sup>a,d</sup>, Zhiwei Jiang<sup>a</sup>, Jeffrey W. Gilman<sup>b</sup>, Takashi Kashiwagi<sup>b</sup>, Jie Liu<sup>a</sup>,  
Rongjun Song<sup>c</sup>, Tao Tang<sup>a,\*</sup>

<sup>a</sup> State Key Laboratory of Polymer Physics and Chemistry, Changchun Institute of Applied  
Chemistry, Chinese Academy of Sciences, Changchun 130022, China

<sup>b</sup> National Institute of Standards and Technology, 100 Bureau Drive, Gaithersburg,  
Maryland 20899, USA

<sup>c</sup> College of Science, Northeast Forestry University, Harbin 150040, China

<sup>d</sup> Graduate School of the Chinese Academy of Sciences, Beijing 100039, China

**Metal dependent control of cis-/trans-1,4 regioselectivity in 1,3-butadiene polymerization catalyzed by transition metal complexes supported by 2,6-bis[1-(iminophenyl)ethyl]pyridine**

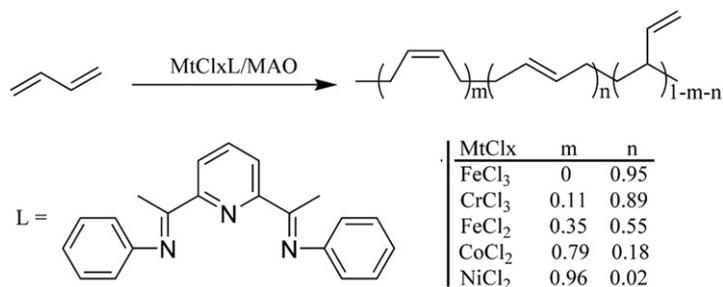
pp 6259–6264

Dirong Gong<sup>a,b</sup>, Baolin Wang<sup>c</sup>, Chenxi Bai<sup>a</sup>, Jifu Bi<sup>a</sup>, Feng Wang<sup>a,b</sup>,  
Weimin Dong<sup>a</sup>, Xuequan Zhang<sup>a,\*</sup>, Liansheng Jiang<sup>a</sup>

<sup>a</sup> Laboratory of Polymer Engineering, Changchun Institute of Applied Chemistry,  
Chinese Academy of Sciences, 5625 Renmin Street,  
Changchun 130022, PR China

<sup>b</sup> Graduate School of the Chinese Academy of Sciences,  
Beijing 100049, PR China

<sup>c</sup> Changchun University of Technology, Changchun 130012, PR China

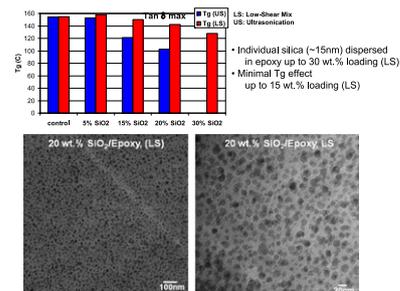


### Mild processing and characterization of silica epoxy hybrid nanocomposite

pp 6265–6273

Chenggang Chen\*, Alexander B. Morgan

University of Dayton Research Institute, 300 College Park, Dayton, OH 45469-0163, USA



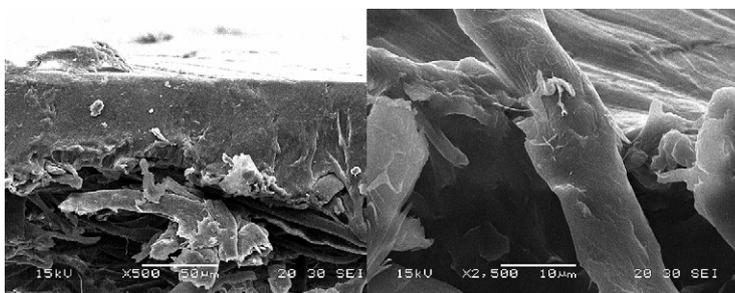
### Biocomposites based on renewable resource: Acetylated and non acetylated cellulose cardboard coated with polyhydroxybutyrate

pp 6274–6280

Viviana P. Cyras<sup>a,\*</sup>, Comisso Ma. Soledad<sup>a</sup>, Vázquez Analía<sup>b</sup>

<sup>a</sup> INTEMA, Instituto de Investigación en Ciencia y Tecnología de Materiales, Facultad de Ingeniería, Universidad Nacional de Mar del Plata, J. B. Justo 4302, Mar del Plata, Argentina

<sup>b</sup> INTECIN, Instituto de Tecnologías y Ciencias de la Ingeniería "Hilario Fernández Long", Facultad de Ingeniería, Universidad de Buenos Aires, Las Heras 2214, Buenos Aires., Argentina



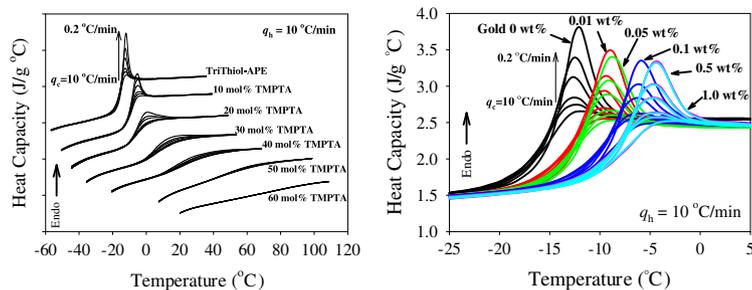
### Physical and chemical modifications of thiol-ene networks to control activation energy of enthalpy relaxation

pp 6281–6286

Junghwan Shin<sup>a,\*</sup>, Sergei Nazarenko<sup>a</sup>, J. Paige Phillips<sup>b</sup>, Charles E. Hoyle<sup>a,b</sup>

<sup>a</sup> School of Polymers and High Performance Materials, University of Southern Mississippi, 118 College Drive, Hattiesburg, MS 39406, USA

<sup>b</sup> Department of Chemistry and Biochemistry, University of Southern Mississippi, 118 College Drive, Hattiesburg, MS 39406, USA



### Effect of uniaxial drawing on the structure and glass transition behavior of poly(trimethylene 2,6-naphthalate)/layered clay nanocomposites

pp 6287–6296

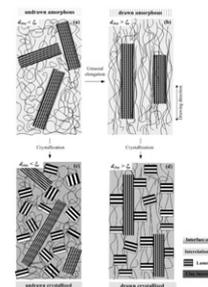
Ahmad Nawaz Khan<sup>a</sup>, Po-Da Hong<sup>a,b,\*</sup>, Wei-Tsung Chuang<sup>c,\*\*</sup>, Kan-Shan Shih<sup>d</sup>

<sup>a</sup> Graduate Institute of Materials Science and Technology, National Taiwan University of Science and Technology, Taipei 106, Taiwan

<sup>b</sup> Department of Polymer Engineering, National Taiwan University of Science and Technology, Taipei 106, Taiwan

<sup>c</sup> National Synchrotron Radiation Research Center, Hsinchu 300, Taiwan

<sup>d</sup> School of Dentistry, National Defense Medical Center, Taipei 114, Taiwan



**Stress softening of multigraft copolymers**

pp 6297–6304

R. Schlegel<sup>a</sup>, D. Wilkin<sup>a</sup>, Y. Duan<sup>a</sup>, R. Weidisch<sup>a,\*</sup>, G. Heinrich<sup>b</sup>,  
D. Uhrig<sup>c</sup>, J.W. Mays<sup>c,d</sup>, H. Iatrou<sup>e</sup>, N. Hadjichristidis<sup>e</sup>

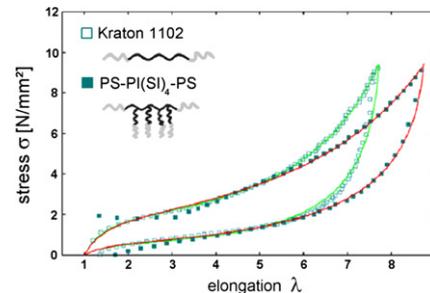
<sup>a</sup> Institute of Materials Science and Technology (IMT), Friedrich-Schiller-University,  
Jena Lobdergraben 32, D-07743 Jena, Germany

<sup>b</sup> Leibniz Institute of Polymer Research Dresden e.V., Hohe Strae 6, D-01069  
Dresden, Germany

<sup>c</sup> Center for Nanophase Materials Sciences, Oak Ridge National Laboratory,  
Oak Ridge, TN 37831, USA

<sup>d</sup> Department of Chemistry, University of Tennessee, Knoxville, TN 37996, USA

<sup>e</sup> Department of Chemistry, University of Athens, Athens 157 71, Greece



**Temperature dependent microphase mixing of model polyurethanes with different intersegment compatibilities**

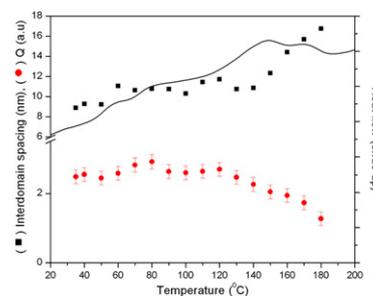
pp 6305–6311

Suphanee Pongkitwittoon<sup>a</sup>, Rebeca Hernandez<sup>b</sup>, Jadwiga Weksler<sup>c</sup>,  
Ajay Padsalgikar<sup>c</sup>, Taeyi Choi<sup>a</sup>, James Runt<sup>a,\*</sup>

<sup>a</sup> Department of Materials Science and Engineering, The Pennsylvania State University,  
University Park, PA 16802, USA

<sup>b</sup> Instituto de Ciencia y Tecnologıa de Polımeros, CSIC, Juan de la Cierva, 328006 Madrid, Spain

<sup>c</sup> AorTech Biomaterials, Dalmore Drive, Caribbean Park, Scoresby, VIC 3179, Australia



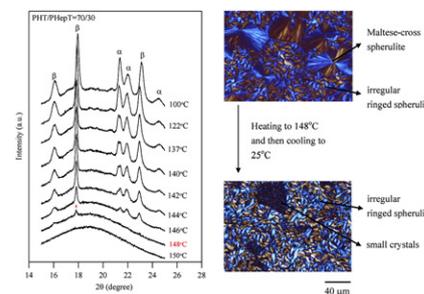
**Amorphous phase and crystalline morphology in blend of two polymorphic polyesters: Poly(hexamethylene terephthalate) and poly(heptamethylene terephthalate)**

pp 6312–6322

Kai Cheng Yen<sup>a</sup>, Eamor M. Woo<sup>a,\*</sup>, Kohji Tashiro<sup>b,\*\*</sup>

<sup>a</sup> Department of Chemical Engineering, National Cheng Kung University,  
Tainan, 701, Taiwan

<sup>b</sup> Department of Future Industry-oriented Basic Science and Materials,  
Toyota Technological Institute, Tempaku, Nagoya 468-8511, Japan

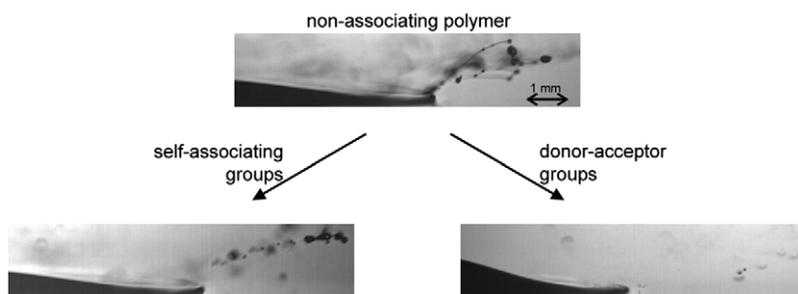


**Effects of pairwise, donor–acceptor functional groups on polymer solubility, solution viscosity and mist control**

pp 6323–6330

R.L. Ameri David, Ming-Hsin Wei, Julia A. Kornfield<sup>\*</sup>

Division of Chemistry and Chemical Engineering, California Institute  
of Technology, Pasadena, California 91125, USA

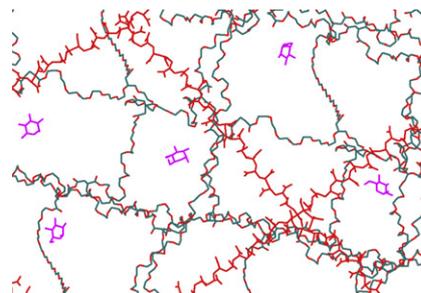


### Hindered diffusion of oligosaccharides in high strength poly(ethylene glycol)/poly(acrylic acid) interpenetrating network hydrogels: Hydrodynamic vs. obstruction models

pp 6331–6339

Dale J. Waters, Curtis W. Frank\*

Department of Chemical Engineering, Stanford University, 381 North-South Mall, Stauffer III, Stanford, CA 94305-5025, USA



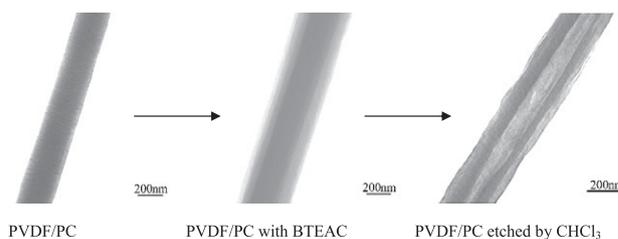
### Formation of core/shell ultrafine fibers of PVDF/PC by electrospinning via introduction of PMMA or BTEAC

pp 6340–6349

Haining Na<sup>a</sup>, Xiwang Liu<sup>a</sup>, Jingqing Li<sup>a</sup>, Yunhui Zhao<sup>a</sup>,  
Ci Zhao<sup>b,\*</sup>, Xiaoyan Yuan<sup>a,\*</sup>

<sup>a</sup> School of Materials Science and Engineering, and Tianjin Key Laboratory of Composite and Functional Materials, Tianjin University, Tianjin 300072, China

<sup>b</sup> Department of Mathematics and Physics, Beijing Technology and Business University, Beijing 100037, China



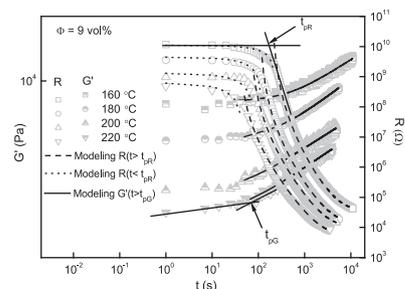
### Thermal-induced percolation in high-density polyethylene/carbon black composites

pp 6350–6356

Qing Cao<sup>a</sup>, Yihu Song<sup>a,b</sup>, Yeqiang Tan<sup>a</sup>, Qiang Zheng<sup>a,b,\*</sup>

<sup>a</sup> Department of Polymer Science and Engineering, Zhejiang University, Hangzhou 310027, China

<sup>b</sup> Key Laboratory of Macromolecular Synthesis and Functionalization of Ministry of Education, Zhejiang University, Hangzhou 310027, China



\*Corresponding author



Full text of this journal is available, on-line from **ScienceDirect**. Visit [www.sciencedirect.com](http://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<sup>®</sup>. Full text available on ScienceDirect<sup>®</sup>



ELSEVIER

ISSN 0032-3861

## Author Index

- Analía, V. 6274  
 Avgeropoulos, A. 6202
- Bai, C. 6259  
 Baskaran, D. 6202  
 Bentini, R. 6218  
 Bi, J. 6259  
 Biffis, A. 6193  
 Bu, L. 6245  
 Bueno, V. B. 6218
- Campa, A. 6218  
 Canton, P. 6193  
 Cao, Q. 6350  
 Casarano, R. 6218  
 Catalani, L. H. 6218  
 Cavicchi, K. A. 6212  
 Chen, C. 6265  
 Choi, T. 6305  
 Chuang, W.-T. 6287  
 Cyras, V. P. 6274
- David, R. L. A. 6323  
 Dong, W. 6259  
 Duan, Y. 6297  
 Dvorakova, G. 6193
- Frank, C. W. 6331
- Geng, Y. 6245  
 Gheber, L. A. 6193  
 Gilman, J. W. 6252  
 Gong, D. 6259  
 Gu, G. 6235
- Hadjichristidis, N. 6202, 6297  
 Han, Y. 6245  
 Harima, Y. 6198  
 Hayashida, K. 6228  
 Heinrich, G. 6297  
 Hernández, R. 6305  
 Hong, P.-D. 6287
- Hoyle, C. E. 6281  
 Huang, L. 6245
- Iacovella, T. 6218  
 Iatrou, H. 6297  
 Iha, F. A. S. 6218  
 Imae, I. 6198
- Jaffe, M. 6218  
 Jiang, L. 6259  
 Jiang, Z. 6252
- Kanehira, K. 6198  
 Kashiwagi, T. 6252  
 Khan, A. N. 6287  
 Komaguchi, K. 6198  
 Kornfield, J. A. 6323
- Li, J. 6340  
 Liu, J. 6252  
 Liu, X. 6340  
 Liu, Y. 6212
- Mays, J. W. 6202, 6297  
 Monteiro, F. B. F. 6218  
 Morgan, A. B. 6265
- Na, H. 6340  
 Nazarenko, S. 6281
- Ohshita, J. 6198  
 Ooyama, Y. 6198
- Padsalgikar, A. 6305  
 Petri, D. F. S. 6218  
 Phillips, J. P. 6281  
 Pich, A. 6193  
 Piperno, S. 6193  
 Pollock, K. L. 6212  
 Pongkitwitoon, S. 6305
- Runt, J. 6305
- Sakellariou, G. 6202  
 Schlegel, R. 6297  
 Shih, K.-S. 6287  
 Shin, J. 6281  
 Soledad, C. M. 6274  
 Song, R. 6252  
 Song, Y. 6350  
 Sugioka, T. 6198
- Takayama, S. 6198  
 Tan, Y. 6350  
 Tanaka, H. 6228  
 Tang, T. 6252  
 Tashiro, K. 6312  
 Tokita, D. 6198
- Uhrig, D. 6297
- Wang, B. 6259  
 Wang, F. 6245  
 Wang, Feng 6259  
 Watanabe, O. 6228  
 Waters, D. J. 6331  
 Wei, M.-H. 6323  
 Weidisch, R. 6297  
 Weksler, J. 6305  
 Wilkin, D. 6297  
 Woo, E. M. 6312  
 Wu, L. 6235  
 Wu, S. 6245
- Yen, K. C. 6312  
 You, B. 6235  
 Yu, H. 6252  
 Yu, X. 6245  
 Yuan, X. 6340
- Zhang, S. 6235  
 Zhang, X. 6259  
 Zhao, C. 6340  
 Zhao, Y. 6340  
 Zheng, Q. 6350