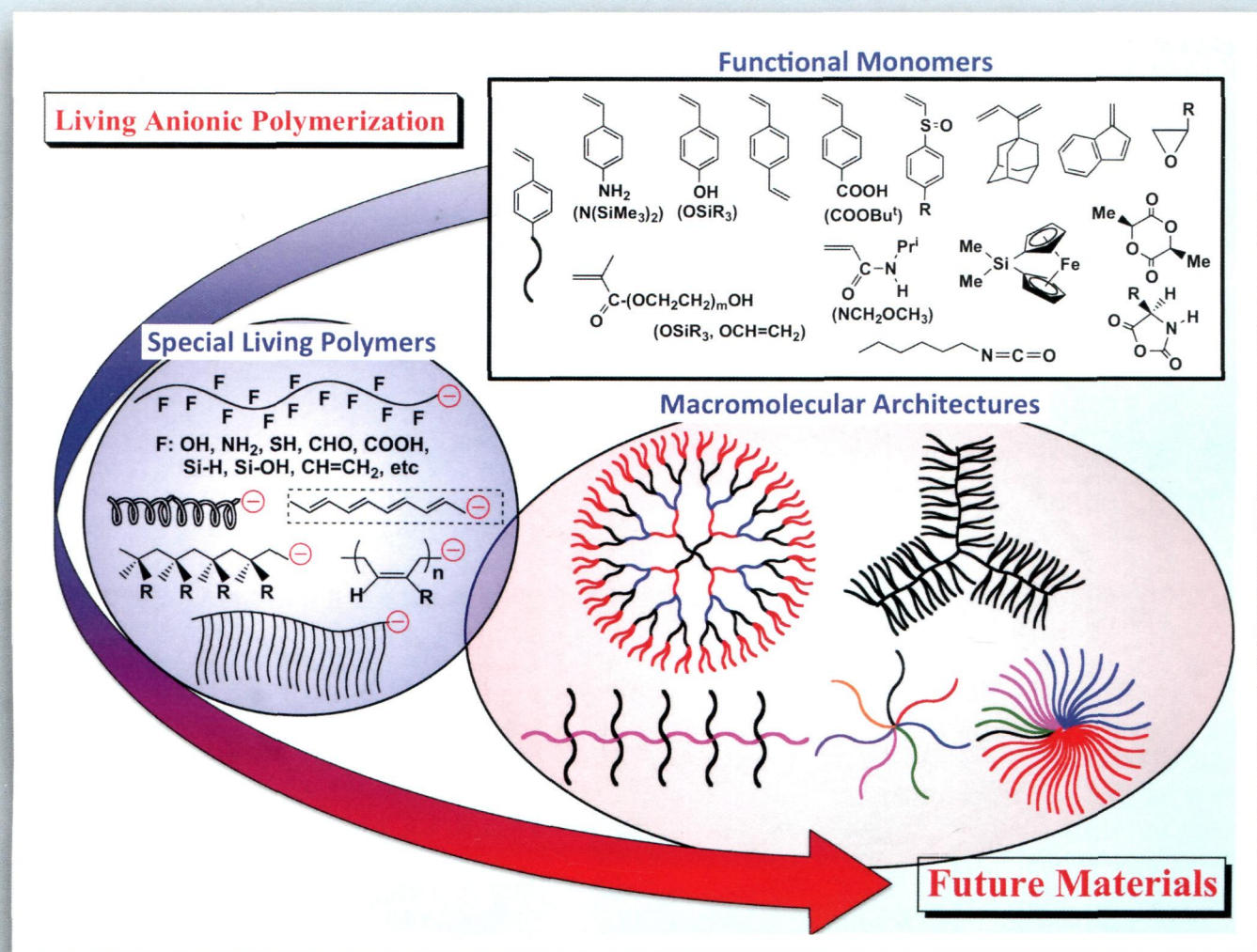


Macromolecules

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ON THE COVER: In recent advances in living anionic polymerization, the functional polymers with well-defined structures and various elaborate complex macromolecular architectures can be synthesized. In this Perspective, we highlight the living anionic polymerization of novel attractive functional monomers, discuss the possibility and limit for controlling the regio- and stereoselective polymerization, and provide the effective methodology for synthesis of various structurally complex macromolecules as promising nanomaterials. See page 1883.

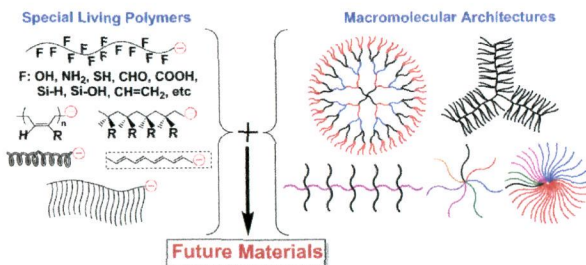
Perspective

1883

[dx.doi.org/10.1021/ma401175m](https://doi.org/10.1021/ma401175m)

Advances in Living Anionic Polymerization: From Functional Monomers, Polymerization Systems, to Macromolecular Architectures

Akira Hirao,* Raita Goseki, and Takashi Ishizone



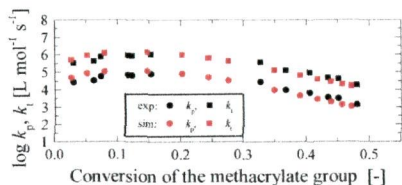
Articles

1906

[dx.doi.org/10.1021/ma402437q](https://doi.org/10.1021/ma402437q)

Effect of Oxygen Inhibition on the Kinetic Constants of the UV-Radical Photopolymerization of Diurethane Dimethacrylate/Photoinitiator Systems

Kentaro Taki,* Yoshihito Watanabe, Hiroshi Ito, and Masahiro Ohshima



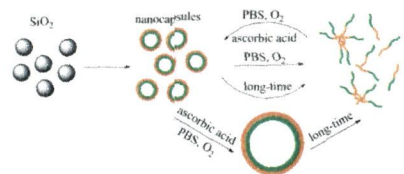
1914

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dx.doi.org/10.1021/ma500006j

Synthesis of Phosphate Buffered Saline- and Ascorbic Acid-Responsive Polymeric Nanocapsules with Cross-Linked Poly(2-hydroxyethyl methacrylate) and Polystyrene Blocks

Bing Huang, Shuxue Zhou, Min Chen, and Limin Wu*

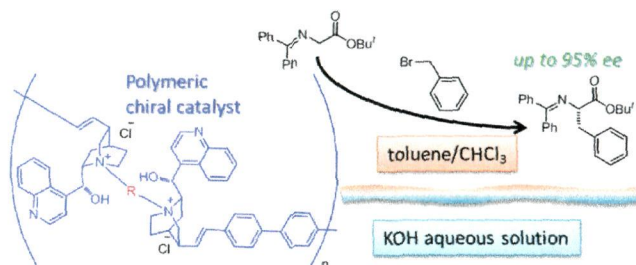


1922

dx.doi.org/10.1021/ma5001018

Synthesis of Cinchona Alkaloid-Derived Chiral Polymers by Mizoroki–Heck Polymerization and Their Application to Asymmetric Catalysis

Md. Masud Parvez, Naoki Haraguchi, and Shinichi Itsuno*



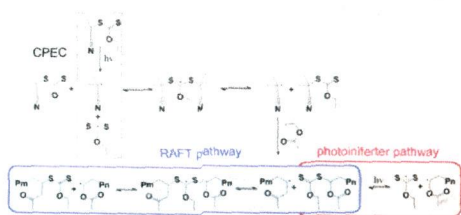
1929

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dx.doi.org/10.1021/ma5002244

Dual Roles of a Xanthate as a Radical Source and Chain Transfer Agent in the Photoinitiated RAFT Polymerization of Vinyl Acetate

Mohd Yusuf Khan, Min-Soo Cho, and Young-Je Kwon*



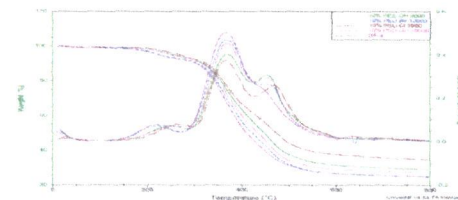
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dx.doi.org/10.1021/ma500242w

Kinetics and Cure Mechanism in Aromatic Polybenzoxazines Modified Using Thermoplastic Oligomers and Telechelics

Ian Hamerton,* Lisa T. McNamara, Brendan J. Howlin, Paul A. Smith, Paul Cross, and Steven Ward

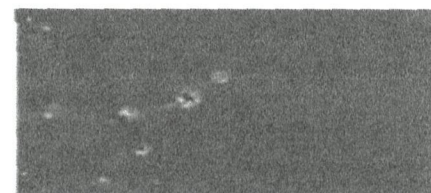


1946

dx.doi.org/10.1021/ma5002436

Toughening Mechanisms in Aromatic Polybenzoxazines Using Thermoplastic Oligomers and Telechelics

Ian Hamerton,* Lisa T. McNamara, Brendan J. Howlin, Paul A. Smith, Paul Cross, and Steven Ward



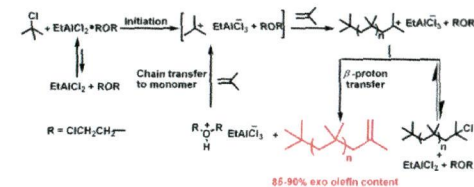
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dx.doi.org/10.1021/ma500042f

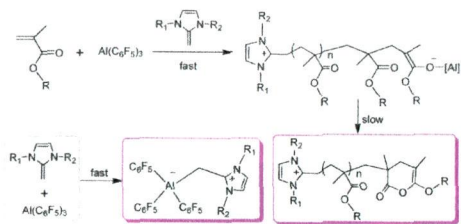
Synthesis of Highly Reactive Polyisobutylene Catalyzed by EtAlCl₂/Bis(2-chloroethyl) Ether Soluble Complex in Hexanes

Rajeev Kumar, Bin Zheng, Kuo-Wei Huang, Jack Emert, and Rudolf Faust*



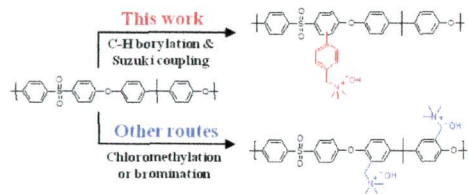
Mechanistic Aspects of Initiation and Deactivation in *N*-Heterocyclic Olefin Mediated Polymerization of Acrylates with Alane as Activator

Yin-Bao Jia, Yan-Bo Wang, Wei-Min Ren, Tieqi Xu, Jing Wang, and Xiao-Bing Lu*



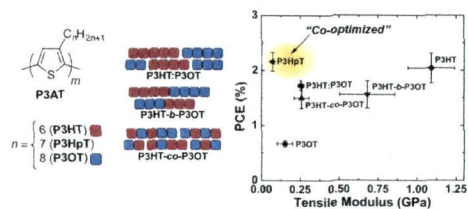
Anion Exchange Fuel Cell Membranes Prepared from C–H Borylation and Suzuki Coupling Reactions

Angela D. Mohanty, Yeong-Beom Lee, Liang Zhu, Michael A. Hickner, and Chulsung Bae*



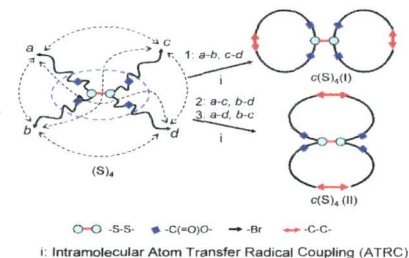
Best of Both Worlds: Conjugated Polymers Exhibiting Good Photovoltaic Behavior and High Tensile Elasticity

Suchol Savagatrup, Adam D. Printz, Daniel Rodriguez, and Darren J. Lipomi*



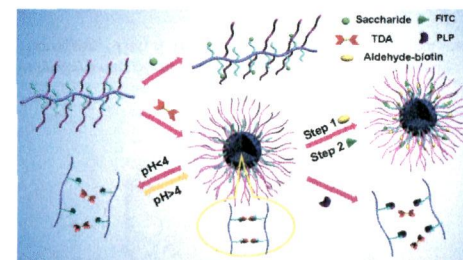
Isomeric Dicyclic Polymers via Atom Transfer Radical Polymerization and Atom Transfer Radical Coupling Cyclization

Shuangshuang Wang, Ke Zhang, Yongming Chen,* and Fu Xi



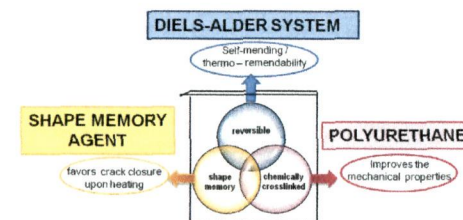
Construction of Multifunctionalizable, Core-Cross-Linked Polymeric Nanoparticles via Dynamic Covalent Bond

Xiaobei Wang, Lin Wang, Shixia Yang, MingMing Zhang, Qingqing Xiong, Hanying Zhao, and Li Liu*



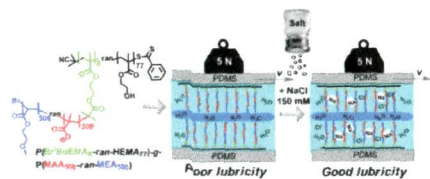
One-Pot Thermo-Remendable Shape Memory Polyurethanes

Guadalupe Rivero, Le-Thu T. Nguyen, Xander K. D. Hillewaere, and Filip E. Du Prez*



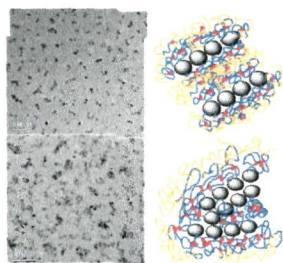
Synthesis, Characterization, and Aqueous Lubricating Properties of Amphiphilic Graft Copolymers Comprising 2-Methoxyethyl Acrylate

Irakli Javakhishvili, Troels Røn, Katja Jankova, Søren Hvilsted,* and Seunghwan Lee*



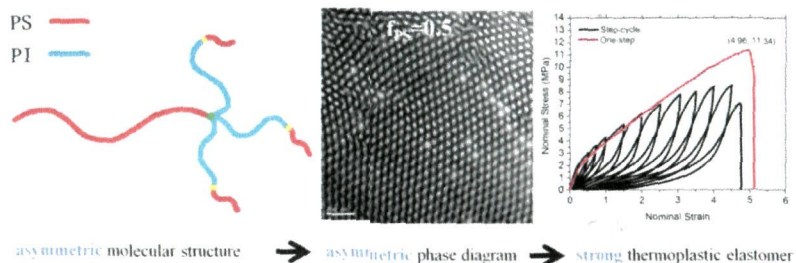
Effect of Ionic Groups on Polymer-Grafted Magnetic Nanoparticle Assemblies

Yang Jiao, Javier Parra, and Pinar Akcora*



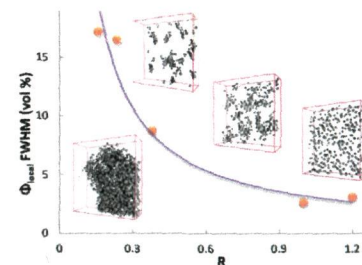
Toward Strong Thermoplastic Elastomers with Asymmetric Miktoarm Block Copolymer Architectures

Weichao Shi, Nathaniel A. Lynd, Damien Montarnal, Yingdong Luo, Glenn H. Fredrickson,* Edward J. Kramer,* Christos Ntaras, Apostolos Avgeropoulos,* and Alexander Hexemer



3D Dispersion of Spherical Silica Nanoparticles in Polymer Nanocomposites: A Quantitative Study by Electron Tomography

Florent Dalmas,* Nicolas Genevaz, Matthias Roth, Jacques Jestin, and Eric Leroy



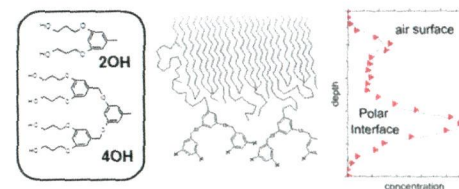
Hierarchical Structural Change in the Stress-Induced Phase Transition of Poly(tetramethylene terephthalate) As Studied by the Simultaneous Measurement of FTIR Spectra and 2D Synchrotron Undulator WAXD/SAXS Data

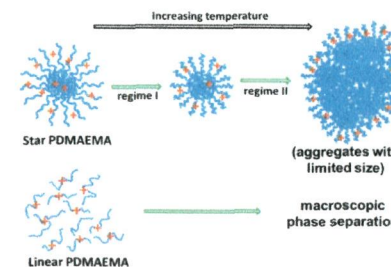
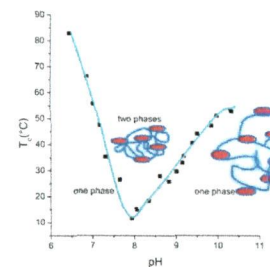
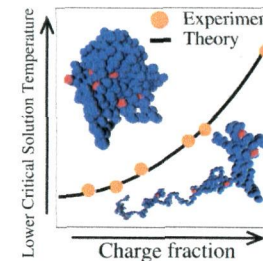
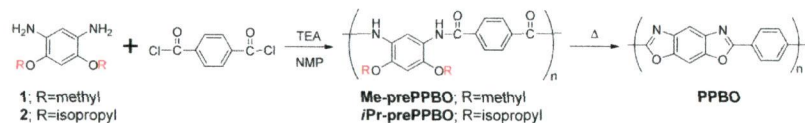
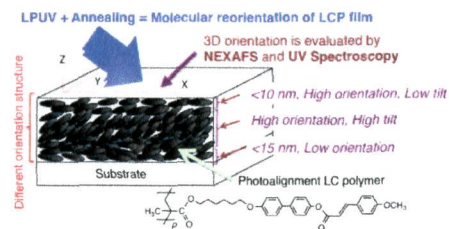
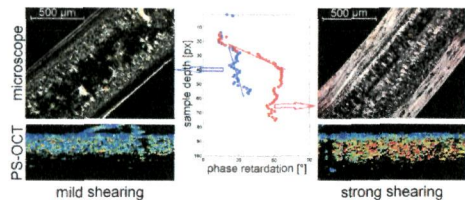
Kohji Tashiro,* Hiroko Yamamoto, Taiyo Yoshioka, Tran Hai Ninh, Masafumi Tasaki, Shigeru Shimada, Takeshi Nakatani, Hiroyuki Iwamoto, Noboru Ohta, and Hiroyasu Masunaga



Multihydroxyl End Functional Polyethylenes: Synthesis, Bulk and Interfacial Properties of Polymer Surfactants

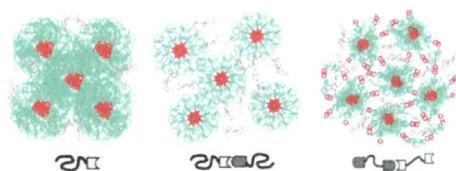
Solomon M. Kimani, Richard L. Thompson,* Lian R. Hutchings, Nigel Clarke, S. M. Reduwan Billah, Victoria Garcia Sakai, and Sarah E. Rogers





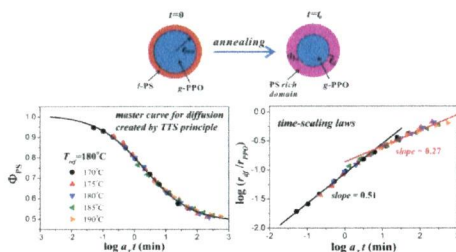
Nanostructure and Rheology of Hydrogen-Bonding Telechelic Polymers in the Melt: From Micellar Liquids and Solids to Supramolecular Gels

Tingzi Yan, Klaus Schröter, Florian Herbst, Wolfgang H. Binder, and Thomas Thurn-Albrecht*



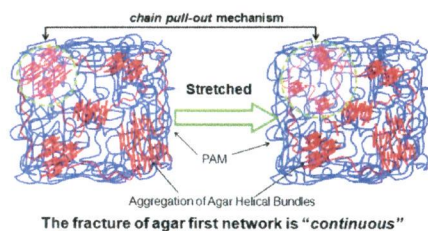
Diffusion Behavior of Polystyrene/Poly(2,6-dimethyl-1,4-phenylene oxide) (PS/PPO) Nanoparticles Mixture: Diffusion Mechanism for Liquid PS and Glassy PPO

Linling Li, Xiaoliang Wang, Dongshan Zhou, Chao Teng, Qing Sun, and Gi Xue*



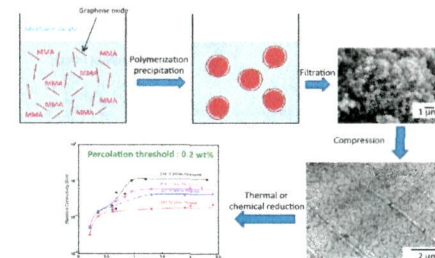
Fracture of the Physically Cross-Linked First Network in Hybrid Double Network Hydrogels

Qiang Chen,* Lin Zhu, Lina Huang, Hong Chen, Kun Xu, Yin Tan, Pixin Wang, and Jie Zheng*



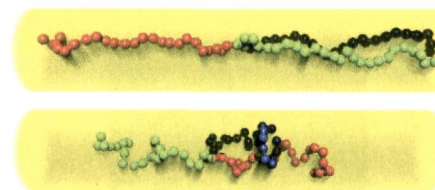
Poly(methyl methacrylate)/Graphene Oxide Nanocomposites by a Precipitation Polymerization Process and Their Dielectric and Rheological Characterization

Jean-Michel Thomassin,* Milana Trifkovic, Walid Alkarmo, Christophe Detrembleur, Christine Jérôme, and Christopher Macosko



Arm Retraction Dynamics and Bistability of a Three-Arm Star Polymer in a Nanopore

A. Milchev,* M. Müller, and L. Klushin



Notes

Enthalpic and Volumetric Changes at Phase Transitions of Polystyrene-*b*-poly(alkyl methacrylate) Copolymers and Their Pressure Dependence

Dong Hyun Lee, Hoyeon Lee, Yonghoon Lee, Yoonkeun Kim, and Du Yeol Ryu*

