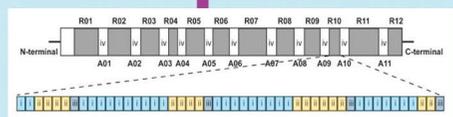


Macromolecules

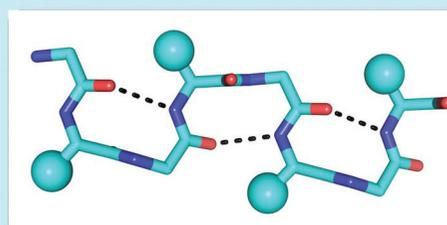
pubs.acs.org/Macromolecules



Bombyx mori

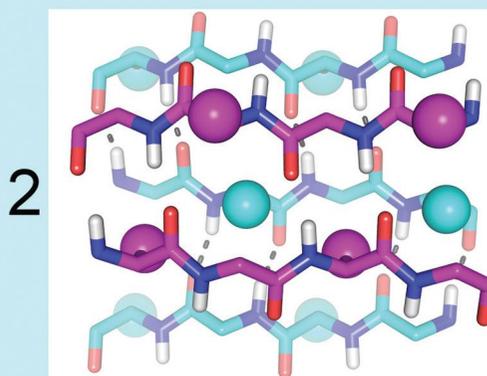


Silk I
stored

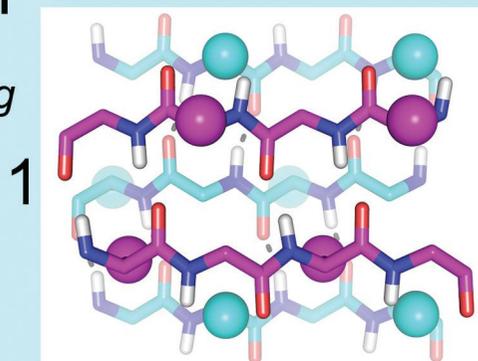


shear
dehydrate

acidify
squeeze



Silk II
after spinning



Macromolecules

April 28, 2015: Vol. 48, Iss. 8

Content

- 1. Analysis of the Structure of Bombyx mori Silk Fibroin by NMR**
Tetsuo Asakura, Keiko Okushita, and Mike P. Williamson
Macromolecules **2015** *48* (8), 2345-2357
DOI: 10.1021/acs.macromol.5b00160
- 2. POSS-Containing Jacketed Polymer: Hybrid Inclusion Complex with Hierarchically Ordered Structures at Sub-10 nm and Angstrom Length Scales**
Yu-Feng Zhu, Wei Liu, Meng-Yao Zhang, Yu Zhou, Yu-Dong Zhang, Ping-Ping Hou, Yu Pan, Zhihao Shen, Xing-He Fan, and Qi-Feng Zhou
Macromolecules **2015** *48* (8), 2358-2366
DOI: 10.1021/acs.macromol.5b00137
- 3. Access to Amphiphilic Cis-Configured Polyamide-3 Using Alcohols as Initiators**
Olga Maiatska, Alexander Belkin, and Helmut Ritter
Macromolecules **2015** *48* (8), 2367-2369
DOI: 10.1021/acs.macromol.5b00272
- 4. Precise Synthesis of Novel Star-Branched Polymers Containing Reactive Poly(1,4-divinylbenzene) Arm(s) by Linking Reaction of Living Anionic Poly(1,4-divinylbenzene) with Chain-(α -Phenyl acrylate)-Functionalized Polymers**
Raita Goseki, Kota Togii, Shunsuke Tanaka, Shotaro Ito, Takashi Ishizone, and Akira Hirao
Macromolecules **2015** *48* (8), 2370-2377
DOI: 10.1021/acs.macromol.5b00352
- 5. Metathesis Cyclopolymerization of 1,6-Heptadiyne Derivative toward Triphenylamine-Functionalized Polyacetylene with Excellent Optoelectronic Properties and Nanocylinder Morphology**
Mengfang Guo, Ruyi Sun, Huijing Han, Jianhua Wu, Meiran Xie, and Xiaojuan Liao
Macromolecules **2015** *48* (8), 2378-2387
DOI: 10.1021/acs.macromol.5b00379
- 6. Hierarchical Self-Organization and Uniaxial Alignment of Well Synthesized Side-Chain Discotic Liquid Crystalline Polymers**
Bin Mu, Bin Wu, Shi Pan, Jianglin Fang, and Dongzhong Chen
Macromolecules **2015** *48* (8), 2388-2398
DOI: 10.1021/acs.macromol.5b00415
- 7. Shape-Persistent, Thermoresponsive Polypeptide Brushes Prepared by Vapor Deposition Surface-Initiated Ring-Opening Polymerization of α -Amino Acid N-Carboxyanhydrides**
Yong Shen, Solenne Deseaux, Bethany Aden, Bradley S. Lokitz, S. Michael Kilbey, II, Zhibo Li, and Harm-Anton Klok
Macromolecules **2015** *48* (8), 2399-2406
DOI: 10.1021/acs.macromol.5b00017
- 8. Influences of a Zinc Catalyst and Bifunctional Chain Transfer Agents on the Polymer Architecture in the Ring-Opening Polymerization of ϵ -Caprolactone**
Yunqing Zhu, Charles Romain, Valentin Poirier, and Charlotte K. Williams
Macromolecules **2015** *48* (8), 2407-2416

DOI: 10.1021/acs.macromol.5b00225

9. Origin of the Rapid Trimerization of Cyanate Ester in a Benzoxazine/Cyanate Ester Blend

Meng Wei Wang, Ru Jong Jeng, and Ching Hsuan Lin

Macromolecules **2015** *48* (8), 2417-2421

DOI: 10.1021/acs.macromol.5b00334

10. Rational Design of Organotin Polyesters

Aaron F. Baldwin, Tran Doan Huan, Rui Ma, Arun Mannodi-Kanakithodi, Matthew Tefferi, Nathan Katz, Yang Cao, Rampi Ramprasad, and Gregory A. Sotzing

Macromolecules **2015** *48* (8), 2422-2428

DOI: 10.1021/ma502424r

11. High-Density and Robust Charge Storage with Poly(anthraquinone-substituted norbornene) for Organic Electrode-Active Materials in Polymer–Air Secondary Batteries

Takuma Kawai, Kenichi Oyaizu, and Hiroyuki Nishide

Macromolecules **2015** *48* (8), 2429-2434

DOI: 10.1021/ma502396r

12. Effects of Cross-Conjugation on the Optical Absorption and Frontier Orbital Levels of Donor–Acceptor Polymers

Gijs W. P. van Pruissen, Jeroen Brebels, Koen H. Hendriks, Martijn M. Wienk, and René A. J. Janssen

Macromolecules **2015** *48* (8), 2435-2443

DOI: 10.1021/acs.macromol.5b00046

13. Synthesis, Characterization, and Field-Effect Transistors Properties of Novel Copolymers Incorporating Nonplanar Biindeno[2,1-b]thiophenylidene Building Blocks

Chao Li, Zupan Mao, Huajie Chen, Liping Zheng, Jianyao Huang, Bin Zhao, Songting Tan, and Gui Yu

Macromolecules **2015** *48* (8), 2444-2453

DOI: 10.1021/acs.macromol.5b00067

14. Synthesis, Characterization, and Photovoltaic Properties of 4,8-Dithienylbenzo[1,2-b:4,5-b']dithiophene-Based Donor–Acceptor Polymers with New Polymerization and 2D Conjugation Extension Pathways: A Potential Donor Building Block for High Performance and Stable Inverted Organic Solar Cells

Nallan Chakravarthi, Kumarasamy Gunasekar, Chang Su Kim, Dong-Ho Kim, Myungkwan Song, Young Geun Park, Jin Yong Lee, Yurim Shin, In-Nam Kang, and Sung-Ho Jin

Macromolecules **2015** *48* (8), 2454-2465

DOI: 10.1021/acs.macromol.5b00115

15. Donor–Acceptor Type Thioxanthenes: Synthesis, Optical Properties, and Two-Photon Induced Polymerization

Rashid Nazir, Evaldas Balčiūnas, Dorota Buczyńska, Florent Bourquard, Dorota Kowalska, David Gray, Sebastian Maćkowski, Maria Farsari, and Daniel T. Gryko

Macromolecules **2015** *48* (8), 2466-2472

DOI: 10.1021/acs.macromol.5b00336

16. Dispersion Reversible Chain Transfer Catalyzed Polymerization (Dispersion RTCP) of Methyl Methacrylate in Supercritical Carbon Dioxide: Pushing the Limit of Selectivity of Chain Transfer Agent

Taisuke Kuroda, Tomoya Taniyama, Yukiya Kitayama, and Masayoshi Okubo

Macromolecules **2015** *48* (8), 2473-2479

DOI: 10.1021/acs.macromol.5b00104

17. Stereospecific Ring-Opening Metathesis Polymerization (ROMP) of endo-Dicyclopentadiene by Molybdenum and Tungsten Catalysts

Benjamin Autenrieth, Hyangsoo Jeong, William P. Forrest, Jonathan C. Axtell, Antje Ota, Thomas Lehr, Michael R. Buchmeiser, and Richard R. Schrock
Macromolecules **2015** *48* (8), 2480-2492
DOI: 10.1021/acs.macromol.5b00123

18. Stereospecific Ring-Opening Metathesis Polymerization (ROMP) of Norbornene and Tetracyclododecene by Mo and W Initiators

Benjamin Autenrieth and Richard R. Schrock
Macromolecules **2015** *48* (8), 2493-2503
DOI: 10.1021/acs.macromol.5b00161

19. Water-Soluble Polyglycerol Dendrimers with Two Orthogonally Reactive Core Functional Groups for One-Pot Functionalization

Si Kyung Yang and Steven C. Zimmerman
Macromolecules **2015** *48* (8), 2504-2508
DOI: 10.1021/acs.macromol.5b00164

20. Two Step Extrusion Process: From Thermal Recycling of PHB to Plasticized PLA by Reactive Extrusion Grafting of PHB Degradation Products onto PLA Chains

Xi Yang, Jocelyn Clénet, Huan Xu, Karin Odelius, and Minna Hakkarainen
Macromolecules **2015** *48* (8), 2509-2518
DOI: 10.1021/acs.macromol.5b00235

21. Synthesis of Robust Surface-Charged Nanoparticles Based on Cyclopropenium Ions

Kato L. Killops, Spencer D. Brucks, Kourtney L. Rutkowski, Jessica L. Freyer, Yivan Jiang, Erica R. Valdes, and Luis M. Campos
Macromolecules **2015** *48* (8), 2519-2525
DOI: 10.1021/acs.macromol.5b00403

22. Enhanced Crystallization from the Glassy State of Poly(L-lactic acid) Confined in Anodic Alumina Oxide Nanopores

Yu Guan, Guoming Liu, Guqiao Ding, Tieying Yang, Alejandro J. Müller, and Dujin Wang
Macromolecules **2015** *48* (8), 2526-2533
DOI: 10.1021/acs.macromol.5b00108

23. Crystallization of Alternating Limonene Oxide/Carbon Dioxide Copolymers: Determination of the Crystal Structure of Stereocomplex Poly(limonene carbonate)

Finizia Auriemma, Claudio De Rosa, Maria Rosaria Di Caprio, Rocco Di Girolamo, and Geoffrey W. Coates
Macromolecules **2015** *48* (8), 2534-2550
DOI: 10.1021/acs.macromol.5b00157

24. Unusual Melting Behavior in Flow Induced Crystallization of LLDPE: Effect of Pressure

E. M. Troisi, G. Portale, Z. Ma, M. van Drongelen, D. Hermida-Merino, and G. W. M. Peters
Macromolecules **2015** *48* (8), 2551-2560
DOI: 10.1021/acs.macromol.5b00255

25. Determination of Nucleus Density in Semicrystalline Polymers from Nonisothermal Crystallization Curves

Alfréd Menyhárd, Márton Bredács, Gergely Simon, and Zsuzsanna Horváth
Macromolecules **2015** *48* (8), 2561-2569
DOI: 10.1021/acs.macromol.5b00275

26. Colloidal Crystallization and Ionic Liquid Induced Partial β -Phase Transformation of Poly(vinylidene fluoride) Nanoparticles

Daichi Okada, Hideki Kaneko, Katsuhiko Kato, Seiichi Furumi, Masaki Takeguchi, and Yohei Yamamoto
Macromolecules **2015** *48* (8), 2570-2575
DOI: 10.1021/acs.macromol.5b00337

- 27. Synthesis and Property of Semicrystalline Anion Exchange Membrane with Well-Defined Ion Channel Structure**
Shoji Miyanishi, Takanori Fukushima, and Takeo Yamaguchi
Macromolecules **2015** *48* (8), 2576-2584
DOI: 10.1021/ma502448g
- 28. Gas Transport Coefficients of Phthalide-Containing High-Tg Glassy Polymers Determined by Gas-Flux and NMR Measurements**
Carolina García, Ángel E. Lozano, José G. de la Campa, Yakov Vygorskii, Mihail Zolotukhin, Javier de Abajo, Leoncio Garrido, and Julio Guzmán
Macromolecules **2015** *48* (8), 2585-2592
DOI: 10.1021/acs.macromol.5b00183
- 29. Highly Efficient Fabrication of Polymer Nanofiber Assembly by Centrifugal Jet Spinning: Process and Characterization**
Liyun Ren, Rahmi Ozisik, Shiva P. Kotha, and Patrick T. Underhill
Macromolecules **2015** *48* (8), 2593-2602
DOI: 10.1021/acs.macromol.5b00292
- 30. Cross-Linked Thermally Rearranged Poly(benzoxazole-co-imide) Membranes Prepared from ortho-Hydroxycopolyimides Containing Pendant Carboxyl Groups and Gas Separation Properties**
Mariola Calle, Hye Jin Jo, Cara M. Doherty, Anita J. Hill, and Young Moo Lee
Macromolecules **2015** *48* (8), 2603-2613
DOI: 10.1021/acs.macromol.5b00298
- 31. Toward a Tunable Fibrous Scaffold: Structural Development during Uniaxial Drawing of Coextruded Poly(ϵ -caprolactone) Fibers**
Alex M. Jordan and LaShanda T. J. Korley
Macromolecules **2015** *48* (8), 2614-2627
DOI: 10.1021/acs.macromol.5b00370
- 32. ABC Triblock Copolymer Particles with Tunable Shape and Internal Structure through 3D Confined Assembly**
Jiangping Xu, Ke Wang, Jingyi Li, Huamin Zhou, Xiaolin Xie, and Jintao Zhu
Macromolecules **2015** *48* (8), 2628-2636
DOI: 10.1021/acs.macromol.5b00335
- 33. Charged Star Diblock Copolymers in Dilute Solutions: Synthesis, Structure, and Chain Conformations**
Sara Bekhradnia, Jakob Stensgaard Diget, Thomas Zinn, Kaizheng Zhu, Sverre Arne Sande, Bo Nyström, and Reidar Lund
Macromolecules **2015** *48* (8), 2637-2646
DOI: 10.1021/ma502488u
- 34. pH-Controlled Hierarchical Self-Assembly of Peptide Amphiphile**
Yiren Chen, Hui Xian Gan, and Yen Wah Tong
Macromolecules **2015** *48* (8), 2647-2653
DOI: 10.1021/ma502572w
- 35. Polyurethane-Grafted Chitosan as New Biomaterials for Controlled Drug Delivery**
Arun Kumar Mahanta, Vikas Mittal, Nitesh Singh, Debabrata Dash, Sudip Malik, Mohan Kumar, and Pralay Maiti
Macromolecules **2015** *48* (8), 2654-2666
DOI: 10.1021/acs.macromol.5b00030
- 36. Remarkable Effect of Molecular Architecture on Chain Exchange in Triblock Copolymer Micelles**
Jie Lu, Frank S. Bates, and Timothy P. Lodge
Macromolecules **2015** *48* (8), 2667-2676
DOI: 10.1021/acs.macromol.5b00294
- 37. pH- and Ionic-Strength-Induced Contraction of Polybasic Micelles in Buffered Aqueous Solutions**

Jennifer E. Laaser, Yaming Jiang, Dustin Sprouse, Theresa M. Reineke, and Timothy P. Lodge
Macromolecules **2015** *48* (8), 2677-2685
DOI: 10.1021/acs.macromol.5b00360

38. Polyelectrolyte Composite: Hyaluronic Acid Mixture with DNA

Ida Delač Marion, Danijel Grgičin, Krešimir Salamon, Sigrid Bernstorff, and Tomislav Vuletić
Macromolecules **2015** *48* (8), 2686-2696
DOI: 10.1021/ma502090x

39. Structural Analysis of Microphase Separated Interface in an ABC-Type Triblock Terpolymer by Combining Methods of Synchrotron-Radiation Grazing Incidence Small-Angle X-ray Scattering and Electron Microtomography

Ryohei Ishige, Takeshi Higuchi, Xi Jiang, Kazuki Mita, Hiroki Ogawa, Hideaki Yokoyama, Atsushi Takahara, and Hiroshi Jinnai
Macromolecules **2015** *48* (8), 2697-2705
DOI: 10.1021/ma502596a

40. High Strength Chitosan Hydrogels with Biocompatibility via New Avenue Based on Constructing Nanofibrous Architecture

Jiangjiang Duan, Xichao Liang, Yan Cao, Sen Wang, and Lina Zhang
Macromolecules **2015** *48* (8), 2706-2714
DOI: 10.1021/acs.macromol.5b00117

41. Robust Reactive Janus Composite Particles of Snowman Shape

Yijing Sun, Fuxin Liang, Xiaozhong Qu, Qian Wang, and Zhenzhong Yang
Macromolecules **2015** *48* (8), 2715-2722
DOI: 10.1021/acs.macromol.5b00207

42. Self-Assembling a Polyoxometalate–PEG Hybrid into a Nanoenhancer To Tailor PEG Properties

Jing Tang, Chi Ma, Xue-Ying Li, Li-Jun Ren, Han Wu, Ping Zheng, and Wei Wang
Macromolecules **2015** *48* (8), 2723-2730
DOI: 10.1021/acs.macromol.5b00214

43. Understanding of Relaxor Ferroelectric Behavior of Poly(vinylidene fluoride–trifluoroethylene–chlorotrifluoroethylene) Terpolymers

Matthew R. Gadinski, Qi Li, Guangzu Zhang, Xiaoshan Zhang, and Qing Wang
Macromolecules **2015** *48* (8), 2731-2739
DOI: 10.1021/acs.macromol.5b00185

44. Unusual Fragility and Cooperativity in Glass-Forming and Crystalline PVDF/PMMA Blends in the Presence of Multiwall Carbon Nanotubes

Maya Sharma, Giridhar Madras, and Suryasarathi Bose
Macromolecules **2015** *48* (8), 2740-2750
DOI: 10.1021/acs.macromol.5b00418

45. Structure and Dynamics Properties at Interphase Region in the Composite of Polystyrene and Cross-Linked Polystyrene Soft Nanoparticle

Tao Chen, Hu-Jun Qian, You-Liang Zhu, and Zhong-Yuan Lu
Macromolecules **2015** *48* (8), 2751-2760
DOI: 10.1021/ma502383n

46. Structural and Dynamical Properties of Polystyrene Thin Films Supported by Multiple Graphene Layers

Anastassia N. Rissanou and Vagelis Harmandaris
Macromolecules **2015** *48* (8), 2761-2772
DOI: 10.1021/ma502524e

47. Effect of Nanoparticles on Ion Transport in Polymer Electrolytes

Santosh Mogurampelly and Venkat Ganesan
Macromolecules **2015** *48* (8), 2773-2786
DOI: 10.1021/ma502578s

48. Spatial Heterogeneity of Glassy Polymer Films

Igor Siretanu, Hassan Saadaoui, Jean-Paul Chapel, and Carlos Drummond

Macromolecules **2015** *48* (8), 2787-2792

DOI: 10.1021/ma502610u

49. Impact of Moisture Adsorption on Structure and Physical Properties of Amorphous Biopolymers

Karol Kulasinski, Robert Guyer, Sinan Ketten, Dominique Derome, and Jan Carmeliet

Macromolecules **2015** *48* (8), 2793-2800

DOI: 10.1021/acs.macromol.5b00248

50. Fluctuations, Phase Transitions, and Latent Heat in Short Diblock Copolymers: Comparison of Experiment, Simulation, and Theory

Timothy M. Gillard, Pavani Medapuram, David C. Morse, and Frank S. Bates

Macromolecules **2015** *48* (8), 2801-2811

DOI: 10.1021/acs.macromol.5b00277

51. Metastable Knots in Confined Semiflexible Chains

Liang Dai, C. Benjamin Renner, and Patrick S. Doyle

Macromolecules **2015** *48* (8), 2812-2818

DOI: 10.1021/acs.macromol.5b00280

52. Ion Entropy in Phase-Separated Aqueous Mixtures of Polyelectrolyte and Neutral Polymer

Mark Vis, Vincent F. D. Peters, Ben H. Ern , and R. Hans Tromp

Macromolecules **2015** *48* (8), 2819-2828

DOI: 10.1021/acs.macromol.5b00324

53. Kirkwood Diffusivity of Long Semiflexible Chains in Nanochannel Confinement

Abhiram Muralidhar and Kevin D. Dorfman

Macromolecules **2015** *48* (8), 2829-2839

DOI: 10.1021/acs.macromol.5b00377

54. Boundary Tension Between Coexisting Phases of a Block Copolymer Blend

Russell K. W. Spencer and Mark W. Matsen

Macromolecules **2015** *48* (8), 2840-2848

DOI: 10.1021/acs.macromol.5b00411

55. Homeotropically Aligned Self-Organizing Dendronized Polymer

Deborah A. Barkley, Tadanori Koga, and Jonathan G. Rudick

Macromolecules **2015** *48* (8), 2849-2854

DOI: 10.1021/ma502522s

56. Correction to Entanglement Effects in Elastomers: Macroscopic vs Microscopic Properties

Sandra Schl gl, Marie-Luise Trutschel, Walter Chass , Gisbert Riess, and Kay Saalw chter

Macromolecules **2015** *48* (8), 2855-2855

DOI: 10.1021/acs.macromol.5b00643