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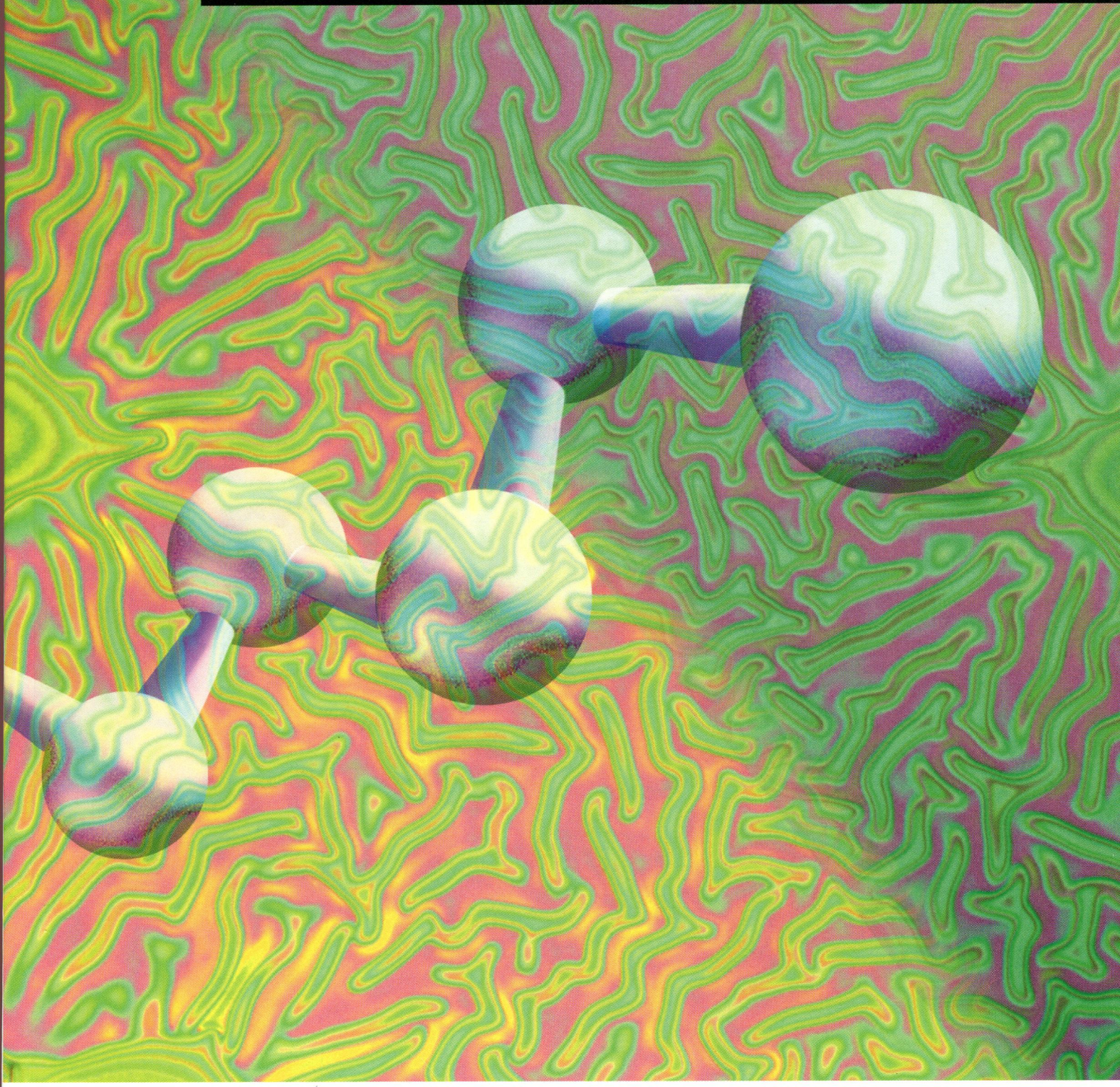

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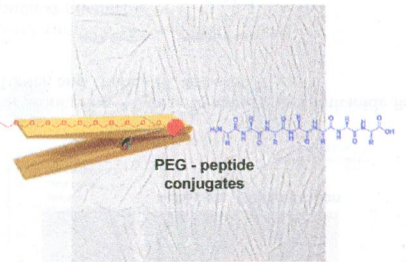
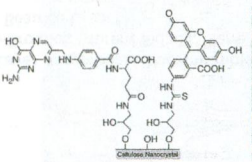
Reviews

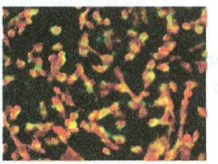
1543 dx.doi.org/10.1021/bm500246w
PEG–Peptide Conjugates
Ian W. Hamley*



Articles

1560 S dx.doi.org/10.1021/bm401593n
Synthesis and Cellular Uptake of Folic Acid-Conjugated Cellulose Nanocrystals for Cancer Targeting
Shuping Dong, Hyung Joon Cho, Yong Woo Lee, and Maren Roman*

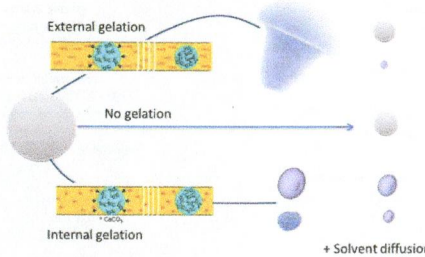




1568 dx.doi.org/10.1021/bm401596m

Microfluidics-Assisted Diffusion Self-Assembly: Toward the Control of the Shape and Size of Pectin Hydrogel Microparticles

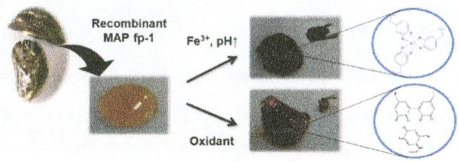
Mélanie Marquis, Joelle Davy, Aiping Fang, and Denis Renard*



1579 dx.doi.org/10.1021/bm4017308

Mussel-Mimetic Protein-Based Adhesive Hydrogel

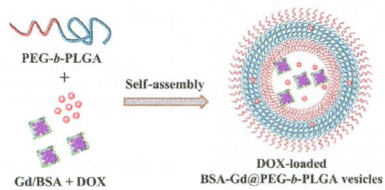
Bum Jin Kim, Dongyeop X. Oh, Sangsik Kim, Jeong Hyun Seo, Dong Soo Hwang,* Admir Masic, Dong Keun Han, and Hyung Joon Cha*



1586 dx.doi.org/10.1021/bm500438x

Theranostic Vesicles Based on Bovine Serum Albumin and Poly(ethylene glycol)-*block*-poly(L-lactic-*co*-glycolic acid) for Magnetic Resonance Imaging and Anticancer Drug Delivery

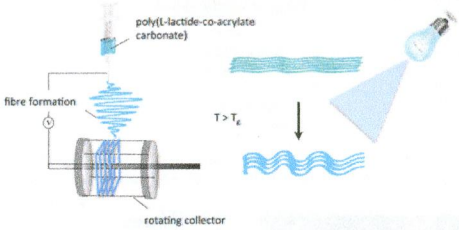
Qiuming Liu, Hongshi Zhu, Jingya Qin, Haiqing Dong,* and Jianzhong Du*



1593 dx.doi.org/10.1021/bm401813j

Electrospun Poly(L-lactide-*co*-acryloyl carbonate) Fiber Scaffolds With a Mechanically Stable Crimp Structure For Ligament Tissue Engineering

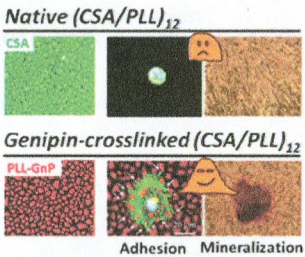
Fei Chen, James W. S. Hayami, and Brian G. Amsden*



1602 dx.doi.org/10.1021/bm401866w

Genipin-Cross-Linked Layer-by-Layer Assemblies: Biocompatible Microenvironments To Direct Bone Cell Fate

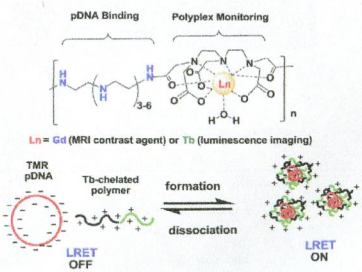
Fabien Gaudière, Sandrine Morin-Grognet, Laurent Bidault, Pierre Lembré, Emmanuel Pauthe, Jean-Pierre Vannier, Hassan Atmani, Guy Ladam, and Béatrice Labat*



1612 dx.doi.org/10.1021/bm401870z

Lanthanide-Containing Polycations for Monitoring Polyplex Dynamics via Lanthanide Resonance Energy Transfer

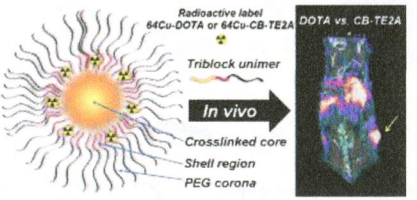
Sneha S. Kelkar, Lian Xue, S. Richard Turner, and Theresa M. Reineke*



1625 Ⓢ dx.doi.org/10.1021/bm401871w

Positron Emission Tomography Based Analysis of Long-Circulating Cross-Linked Triblock Polymeric Micelles in a U87MG Mouse Xenograft Model and Comparison of DOTA and CB-TE2A as Chelators of Copper-64

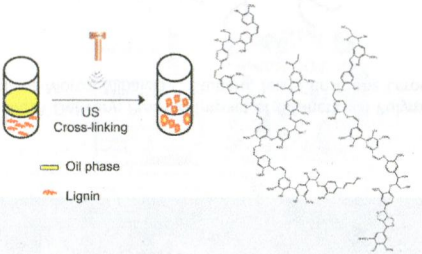
Andreas I. Jensen, Tina Binderup, Pramod Kumar EK, Andreas Kjær, Palle H. Rasmussen, and Thomas L. Andresen*



1634 Ⓢ dx.doi.org/10.1021/bm500015j

Ultrasound Driven Assembly of Lignin into Microcapsules for Storage and Delivery of Hydrophobic Molecules

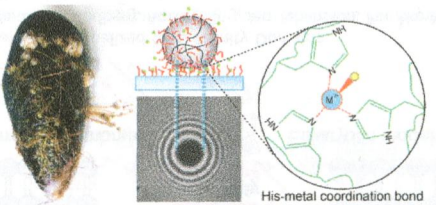
Mariarosaria Tortora, Francesca Cavalieri, Pasquale Mosesso, Flavia Ciaffardini, Federica Melone, and Claudia Crestini*



1644 Ⓢ dx.doi.org/10.1021/bm500017u

Metal-Mediated Molecular Self-Healing in Histidine-Rich Mussel Peptides

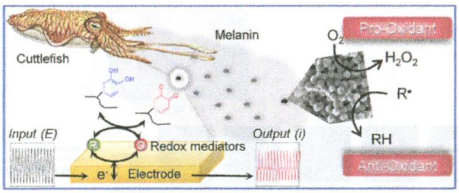
Stephan Schmidt, Antje Reinecke, Felix Wojcik, Daniel Pussak, Laura Hartmann, and Matthew James Harrington*



1653 S dx.doi.org/10.1021/bm500026x

Context-Dependent Redox Properties of Natural Phenolic Materials

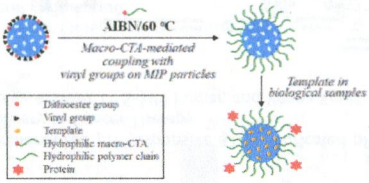
Eunkyoung Kim, Yi Liu, W. Taylor Leverage, Jun-Jie Yin, Ian M. White, William E. Bentley, and Gregory F. Payne*



1663 S dx.doi.org/10.1021/bm500086e

Well-Defined Hydrophilic Molecularly Imprinted Polymer Microspheres for Efficient Molecular Recognition in Real Biological Samples by Facile RAFT Coupling Chemistry

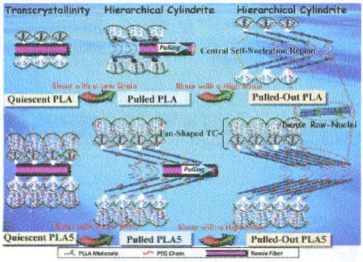
Man Zhao, Xiaojing Chen, Hongtao Zhang, Husheng Yan, and Huiqi Zhang*



1676 dx.doi.org/10.1021/bm500100z

Structural Basis for Unique Hierarchical Cylindrites Induced by Ultrahigh Shear Gradient in Single Natural Fiber Reinforced Poly(lactic acid) Green Composites

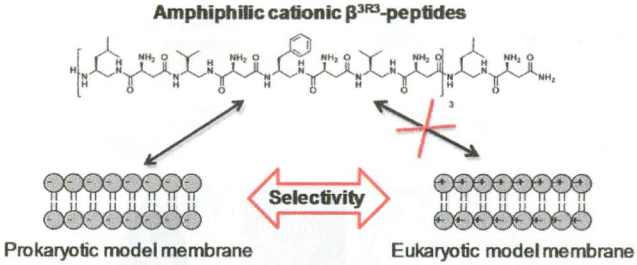
Huan Xu, Lan Xie, Xin Jiang, Minna Hakkarainen, Jing-Bin Chen, Gan-Ji Zhong,* and Zhong-Ming Li*



1687 Ⓢ dx.doi.org/10.1021/bm500101w

Amphiphilic Cationic β^{3R3}-Peptides: Membrane Active Peptidomimetics and Their Potential as Antimicrobial Agents

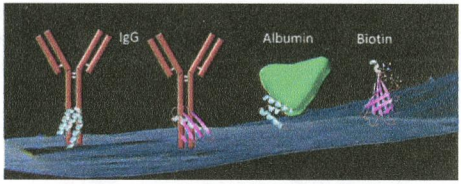
Simone Mosca, Janos Keller, Nahid Azzouz, Stefanie Wagner, Alexander Titz, Peter H. Seeberger, Gerald Brezesinski, and Laura Hartmann*



1696 Ⓢ dx.doi.org/10.1021/bm500114e

Recombinant Spider Silk Genetically Functionalized with Affinity Domains

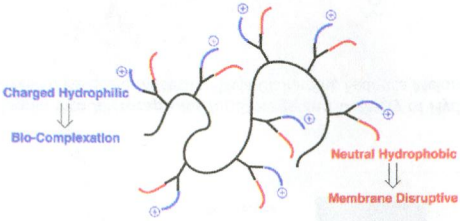
Ronnie Jansson, Naresh Thatikonda, Diana Lindberg, Anna Rising, Jan Johansson, Per-Åke Nygren, and My Hedhammar*



1707 Ⓢ dx.doi.org/10.1021/bm5001197

Amphipathic Homopolymers for siRNA Delivery: Probing Impact of Bifunctional Polymer Composition on Transfection

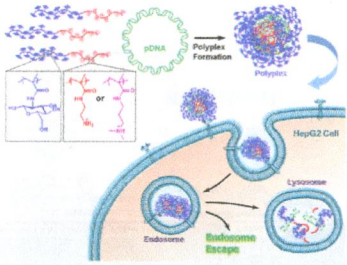
Christian Buerkli, Soo Hyeon Lee, Elena Moroz, Mihaiela C. Stuparu, Jean-Christophe Leroux, and Anzar Khan*



1716 Ⓢ dx.doi.org/10.1021/bm5001229

Glucose-Containing Diblock Polycations Exhibit Molecular Weight, Charge, and Cell-Type Dependence for pDNA Delivery

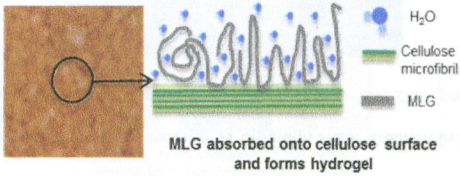
Yaoying Wu, Miao Wang, Dustin Sprouse, Adam E. Smith, and Theresa M. Reineke*



1727 Ⓢ dx.doi.org/10.1021/bm5001247

Role of (1,3)(1,4)-β-Glucan in Cell Walls: Interaction with Cellulose

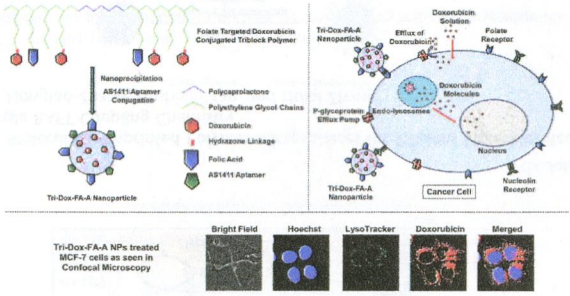
Sarah N. Kiemle,* Xiao Zhang, Alan R. Esker, Guillermo Toriz, Paul Gatenholm, and Daniel J. Cosgrove



1737 Ⓢ dx.doi.org/10.1021/bm5001263

AS1411 Aptamer and Folic Acid Functionalized pH-Responsive ATRP Fabricated pPEGMA–PCL–pPEGMA Polymeric Nanoparticles for Targeted Drug Delivery in Cancer Therapy

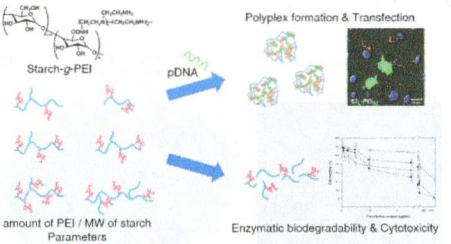
Shantanu V. Lale, Aswathy R. G., Athulya Aravind, D. Sakthi Kumar, and Veena Koul*



1753 S dx.doi.org/10.1021/bm500128k

Design of Starch-*graft*-PEI Polymers: An Effective and Biodegradable Gene Delivery Platform

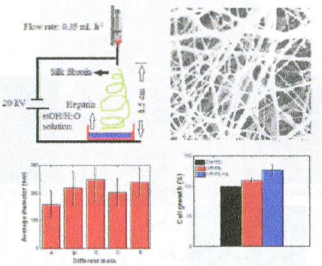
Hiroe Yamada, Brigitta Loretz,* and Claus-Michael Lehr



1762 dx.doi.org/10.1021/bm500132g

Preparing Silk Fibroin Nanofibers through Electrospinning: Further Heparin Immobilization toward Hemocompatibility Improvement

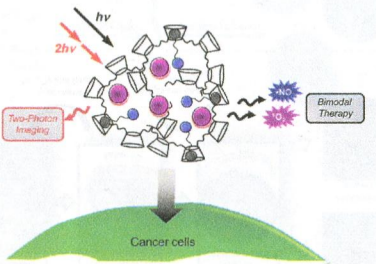
Marília Cestari, Vinícius Muller, Jean Henrique da Silva Rodrigues, Celso V. Nakamura, Adley F. Rubira, and Edvani C. Muniz*



1768 dx.doi.org/10.1021/bm500156z

Two-Photon Fluorescence Imaging and Bimodal Phototherapy of Epidermal Cancer Cells with Biocompatible Self-Assembled Polymer Nanoparticles

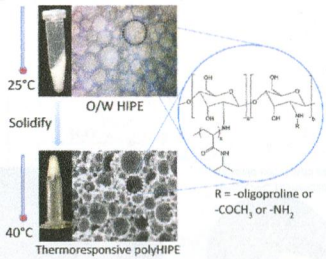
Noufal Kandoth, Vladimir Kirejev, Sandra Monti, Ruxandra Gref, Marica B. Ericson, and Salvatore Sortino*



1777 Ⓢ dx.doi.org/10.1021/bm500172u

High Internal Phase Emulsion Templating with Self-Emulsifying and Thermoresponsive Chitosan-*graft*-PNIPAM-*graft*-Oligoproline

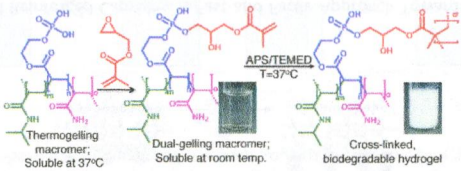
Bernice H. L. Oh, Alexander Bismarck,* and Mary B. Chan-Park*



1788 dx.doi.org/10.1021/bm500175e

Synthesis and Characterization of Injectable, Biodegradable, Phosphate-Containing, Chemically Cross-Linkable, Thermoresponsive Macromers for Bone Tissue Engineering

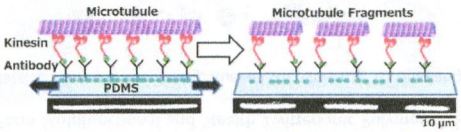
Brendan M. Watson, F. Kurtis Kasper, Paul S. Engel, and Antonios G. Mikos*



1797 Ⓢ dx.doi.org/10.1021/bm5001789

Biomolecular Motor Modulates Mechanical Property of Microtubule

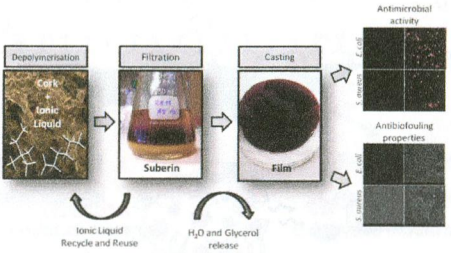
Arif Md. Rashedul Kabir, Daisuke Inoue, Yoshimi Hamano, Hiroyuki Mayama, Kazuki Sada, and Akira Kakugo*



1806 Ⓢ dx.doi.org/10.1021/bm500201s

Ex Situ Reconstitution of the Plant Biopolyester Suberin as a Film

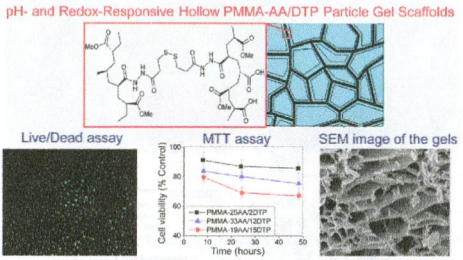
Helga Garcia, Rui Ferreira, Celso Martins, Andreia F. Sousa, Carmen S. R. Freire, Armando J. D. Silvestre, Werner Kunz, Luís Paulo N. Rebelo, and Cristina Silva Pereira*



1814 Ⓢ dx.doi.org/10.1021/bm5002069

Injectable Biocompatible and Biodegradable pH-Responsive Hollow Particle Gels Containing Poly(acrylic acid): The Effect of Copolymer Composition on Gel Properties

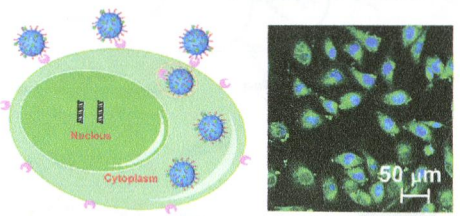
Silvia S. Halacheva,* Daman J. Adlam, Eseelle K. Hendow, Tony J. Freemont, Judith Hoyland, and Brian R. Saunders*



1828 Ⓢ dx.doi.org/10.1021/bm5002203

Synthesis and Self-Assembly of Amphiphilic Aptamer-Functionalized Hyperbranched Multiarm Copolymers for Targeted Cancer Imaging

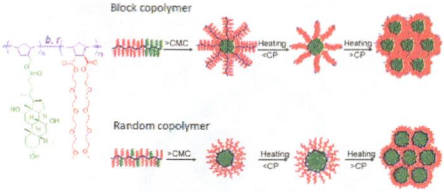
Songrui Yu, Ruijiao Dong, Jianxin Chen, Feng Chen, Wenfeng Jiang, Yongfeng Zhou,* Xinyuan Zhu,* and Deyue Yan



1837 dx.doi.org/10.1021/bm5002262

Block and Random Copolymers Bearing Cholic Acid and Oligo(ethylene glycol) Pendant Groups: Aggregation, Thermosensitivity, and Drug Loading

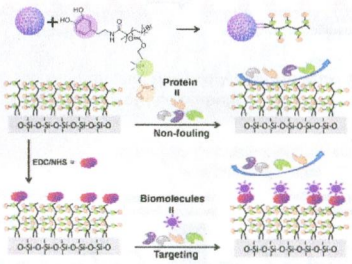
Yu Shao, Yong-Guang Jia, Changying Shi, Juntao Luo, and X. X. Zhu*



1845 dx.doi.org/10.1021/bm500209a

A Robust Graft-to Strategy To Form Multifunctional and Stealth Zwitterionic Polymer-Coated Mesoporous Silica Nanoparticles

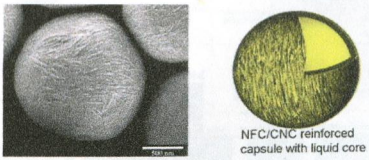
Yongheng Zhu, Harihara S. Sundaram, Sijun Liu, Lei Zhang, Xuewei Xu, Qiuming Yu, Jiaqiang Xu,* and Shaoyi Jiang*



1852 dx.doi.org/10.1021/bm500232h

Cellulose Nanofiber/Nanocrystal Reinforced Capsules: A Fast and Facile Approach Toward Assembly of Liquid-Core Capsules with High Mechanical Stability

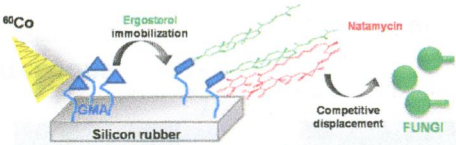
Anna J. Svagan,* Anna Musyanovych, Michael Kappl, Max Bernhardt, Gunnar Glasser, Christian Wohnhaas, Lars A. Berglund, Jens Risbo, and Katharina Landfester



1860 S dx.doi.org/10.1021/bm500257s

Materials with Fungi-Bioinspired Surface for Efficient Binding and Fungi-Sensitive Release of Antifungal Agents

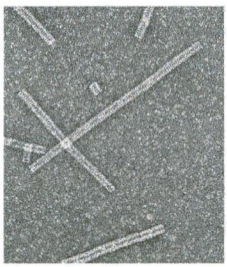
Tania Segura, Ana M. Puga, Guillermina Burillo,* José Llovo, Gilles Brackman, Tom Coenye, Angel Concheiro, and Carmen Alvarez-Lorenzo*



1871 S dx.doi.org/10.1021/bm500261u

Peroxiredoxin is a Versatile Self-Assembling Tecton for Protein Nanotechnology

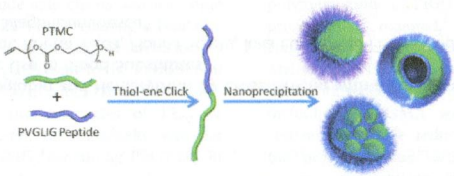
Amy J. Phillips, Jacob Littlejohn, N. Amy Yewdall, Tong Zhu, Céline Valéry, F. Grant Pearce, Alok K. Mitra, Mazdak Radjainia, and Juliet A. Gerrard*



1882 S dx.doi.org/10.1021/bm500296n

Enzyme-Degradable Self-Assembled Nanostructures from Polymer–Peptide Hybrids

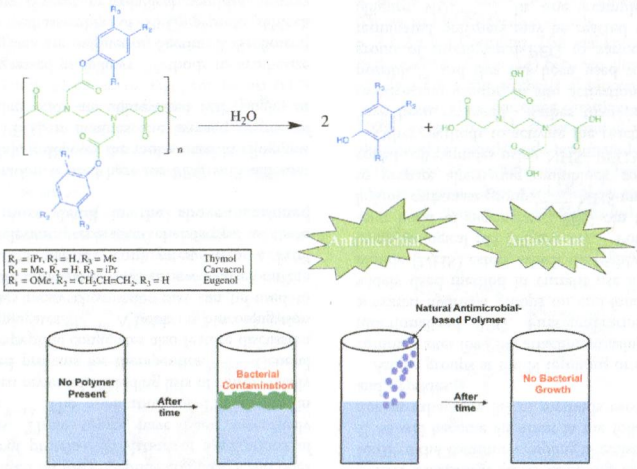
Daniel Bacinello, Elisabeth Garanger, Daniel Taton,* Kam Chiu Tam,* and Sébastien Lecommandoux*



1889 Ⓢ dx.doi.org/10.1021/bm500303a

Poly(anhydride-esters) Comprised Exclusively of Naturally Occurring Antimicrobials and EDTA: Antioxidant and Antibacterial Activities

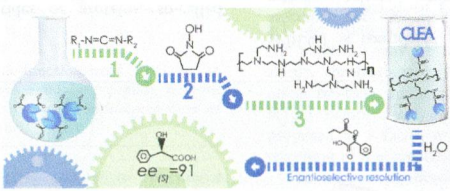
Ashley L. Carbone-Howell, Nicholas D. Stebbins, and Kathryn E. Uhrich*



1896 Ⓢ dx.doi.org/10.1021/bm500333v

Carrier-Free Immobilization of Lipase from *Candida rugosa* with Polyethyleneimines by Carboxyl-Activated Cross-Linking

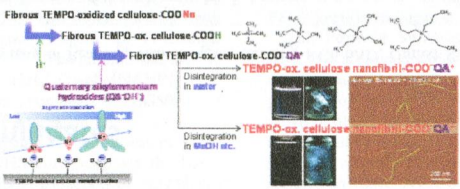
Susana Velasco-Lozano, Fernando López-Gallego, Rafael Vázquez-Duhalt, Juan C. Mateos-Díaz, José M. Guisán, and Ernesto Favela-Torres*



1904 Ⓢ dx.doi.org/10.1021/bm500384d

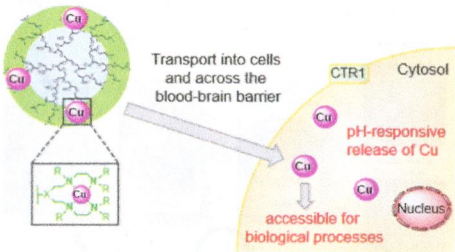
Bulky Quaternary Alkylammonium Counterions Enhance the Nanodispersibility of 2,2,6,6-Tetramethylpiperidine-1-oxyl-Oxidized Cellulose in Diverse Solvents

Michiko Shimizu, Tsuguyuki Saito, and Akira Isogai*



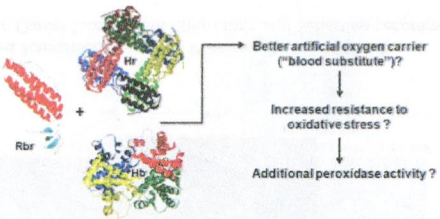
1910 Ⓢ dx.doi.org/10.1021/bm500400k

Copper Transport Mediated by Nanocarrier Systems in a Blood–Brain Barrier In Vitro Model
Susanne Fehse, Sabrina Nowag, Mohiuddin Quadir, Kwang Sik Kim, Rainer Haag,* Gerd Multhaup,* and



1920 Ⓢ dx.doi.org/10.1021/bm5004256

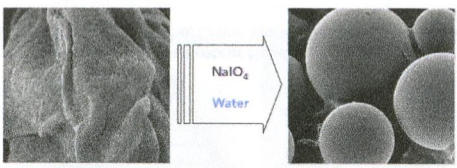
Oxidative Protection of Hemoglobin and Hemerythrin by Cross-Linking with a Nonheme Iron Peroxidase: Potentially Improved Oxygen Carriers for Use in Blood Substitutes
Denisa Hathazi, Augustin C. Mot, Anetta Vaida, Florina Scurtu, Iulia Lupan, Eva Fischer-Fodor, Grigore Damian, Donald M. Kurtz Jr., and Radu Silaghi-Dumitrescu*



Notes

1928 Ⓢ dx.doi.org/10.1021/bm5002944

Convenient One-Pot Formation of 2,3-Dialdehyde Cellulose Beads via Periodate Oxidation of Cellulose in Water
Jonas Lindh,* Daniel O. Carlsson, Maria Strømme, and Albert Mihranyan*



Additions and Corrections

1933 dx.doi.org/10.1021/bm500417v

Correction to Stimuli-Induced Release of Compounds from Elastin Biomimetic Matrix
Antonella Bandiera,* Ana Markulin, Lucia Corich, Francesca Vita, and Violetta Borelli

Ⓢ Supporting Information available via online article