

# BioMACROMOLECULES

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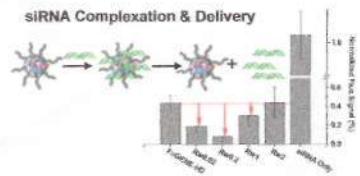
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## Star Polymers with a Cationic Core Prepared by ATRP for Cellular Nucleic Acids Delivery

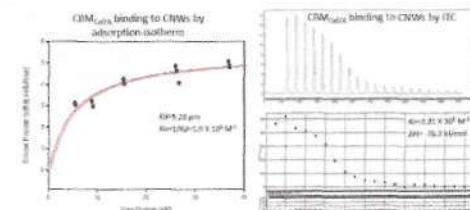
Hong Y. Cho, Saadyah E. Averick, Eduardo Paredes, Katarzyna Wegner, Amram Averick, Stefan Jurga, Subha R. Das, and Krzysztof Matyjaszewski\*



## Articles

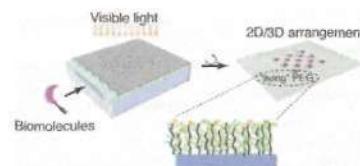
Binding Specificity and Thermodynamics of Cellulose-Binding Modules from *Trichoderma reesei* Cel7A and Cel6A

Jing Guo and Jeffrey M. Catchmark\*



## Creating "Living" Polymer Surfaces to Pattern Biomolecules and Cells on Common Plastics

Chunyan Li, Andrew Glidle, Xiaofei Yuan, Zhixiong Hu, Ellie Pulleine, Jon Cooper, Wantai Yang,\* and Huabing Yin\*



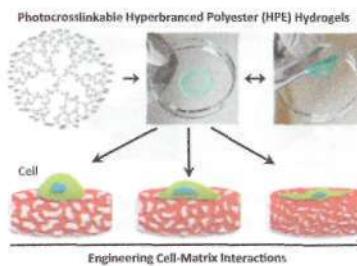
## Directing Chondrogenesis of Stem Cells with Specific Blends of Cellulose and Silk

Nandita Singh, Sameer S. Rahatekar,\* Krzysztof K. K. Koziol, TH. Sky Ng, Avinash J. Patil, Stephen Mann, Anthony P. Hollander, and Wael Kafienah\*



## Hyperbranched Polyester Hydrogels with Controlled Drug Release and Cell Adhesion Properties

Hongbin Zhang, Alpesh Patel, Akhilesh K. Gaharwar, Silvia M. Mihaila, Giorgio Igiglia, Shilpaa Mukundan, Hojae Bae, Huai Yang,\* and Ali Khademhosseini\*



## Cell Durotaxis on Polyelectrolyte Multilayers with Photogenerated Gradients of Modulus

Jessica S. Martinez, Ali M. Lehaf, Joseph B. Schlenoff, and Thomas C. S. Keller III\*



1321

**Evaluation of the In Vitro Cytotoxicity of Cross-Linked Biomaterials**

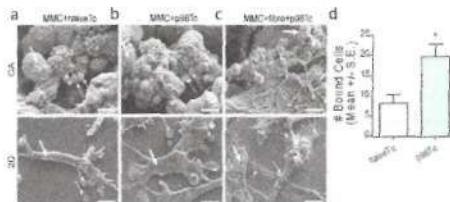
Martha O. Wang, Julie M. Etheridge, Joshua A. Thompson, Charlotte E. Vorwald, David Dean, and John P. Fisher\*

[dx.doi.org/10.1021/bm301962f](https://doi.org/10.1021/bm301962f)

1330

**Three-Dimensional Scaffolds to Evaluate Tumor Associated Fibroblast-Mediated Suppression of Breast Tumor Specific T Cells**

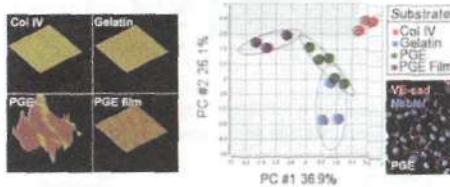
Vy Phan-Lai, Stephen J. Florkzyk, Forrest M. Kievit, Kui Wang, Ekram Gad, Mary L. Disis, and Miqin Zhang\*

[dx.doi.org/10.1021/bm301928u](https://doi.org/10.1021/bm301928u)

1338

**Tissue Factor Activity and ECM-Related Gene Expression in Human Aortic Endothelial Cells Grown on Electrospun Biohybrid Scaffolds**

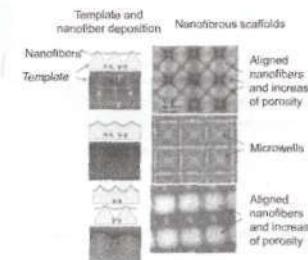
Jingjia Han, Jonathan A. Gerstenhaber, Philip Lazarovici, and Peter I. Lelkes\*

[dx.doi.org/10.1021/bm400450m](https://doi.org/10.1021/bm400450m)

1349

**Engineering the Microstructure of Electrospun Fibrous Scaffolds by Microtopography**

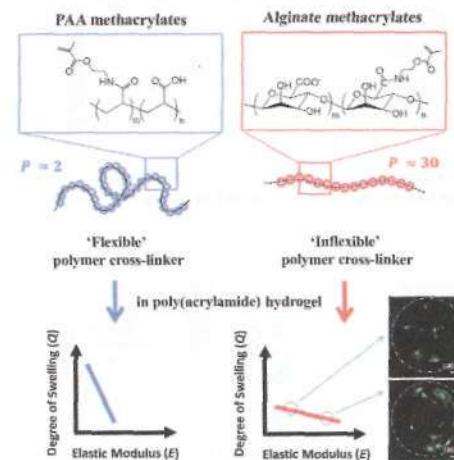
Qian Cheng, Benjamin L.-P. Lee, Kyriakos Komvopoulos,\* and Song Li

[dx.doi.org/10.1021/bm302000n](https://doi.org/10.1021/bm302000n)

1361

**Tailoring the Dependency between Rigidity and Water Uptake of a Microfabricated Hydrogel with the Conformational Rigidity of a Polymer Cross-Linker**

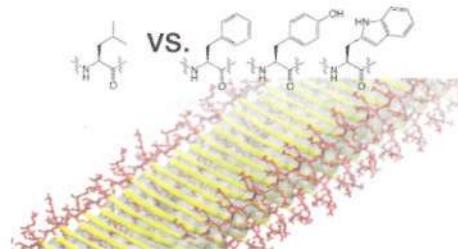
John J. Schmidt, Jae Hyun Jeong, Vincent Chan, Chaenyung Cha, Kwanghyun Baek, Mei-Hsiu Lai, Rashid Bashir, and Hyunjoon Kong\*

[dx.doi.org/10.1021/bm302004v](https://doi.org/10.1021/bm302004v)

**Self-Assembling Multidomain Peptide Fibers with Aromatic Cores**

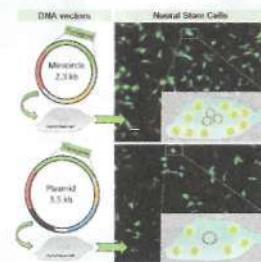
Erica L. Bakota, Ozge Sensoy, Beytullah Ozgur, Mehmet Sayar, and Jeffrey D. Hartgerink\*

dx.doi.org/10.1021/bm4000019

**Nonviral Gene Delivery to Neural Stem Cells with Minicircles by Microporation**

Catarina Madeira,\* Carlos A. V. Rodrigues, Mónica S. C. Reis, Filipa F. C. G. Ferreira, Raquel E. S. M. Correia, Maria M. Diogo, and Joaquim M. S. Cabral

dx.doi.org/10.1021/bm400015b

**Probing the Mechanism of TBAF-Catalyzed Deacylation of Cellulose Esters**

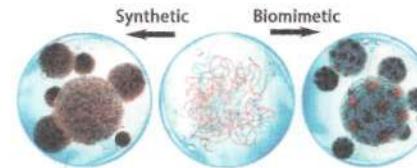
Xueyan Zheng, Richard D. Gandour, and Kevin J. Edgar\*

dx.doi.org/10.1021/bm400041w

**Asymmetric Collapse in Biomimetic Complex Coacervates Revealed by Local Polymer and Water Dynamics**

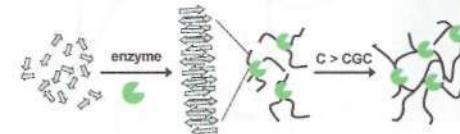
Julia H. Ortony, Dong Soo Hwang, John M. Franck, J. Herbert Waite, and Songi Han\*

dx.doi.org/10.1021/bm4000579

**Effect of Enzyme Concentration of the Morphology and Properties of Enzymatically Triggered Peptide Hydrogels**

Jean-Baptiste Guilbaud, Cyrille Rochas, Aline F. Miller, and Alberto Saiani\*

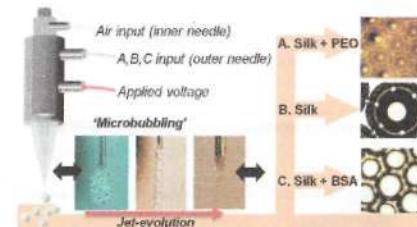
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**Electrohydrodynamic Bubbling: An Alternative Route to Fabricate Porous Structures of Silk Fibroin Based Materials**

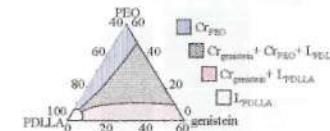
Zeynep Ekemen, Zeeshan Ahmad, Eleanor Stride, David Kaplan,\* and Mohan Edirisinghe\*



dx.doi.org/10.1021/bm4000794

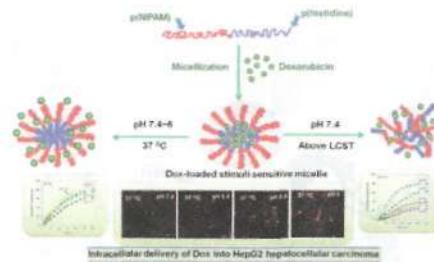
**Genistein-Modified Poly(ethylene oxide)/Poly(d,L-lactic acid) Electrospun Mats with Improved Antioxidant and Anti-inflammatory Properties**

Sasiwimon Buddhiranon, Linda A. DeFine, Thomas S. Alexander, and Thein Kyu\*



**Dual Stimuli-Responsive Poly(*N*-isopropylacrylamide)-*b*-poly(*L*-histidine) Chimeric Materials for the Controlled Delivery of Doxorubicin into Liver Carcinoma**

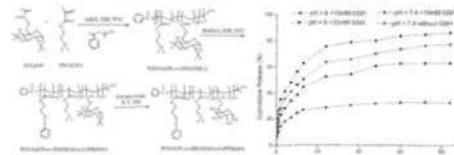
Renjith P. Johnson, Young-Il Jeong, Johnson V. John, Chung-Wook Chung, Dae Hwan Kang, Manickam Selvaraj, Hongsuk Suh, and Il Kim\*



dx.doi.org/10.1021/bm400089m

**Galactose-Based Amphiphilic Block Copolymers: Synthesis, Micellization, and Bioapplication**

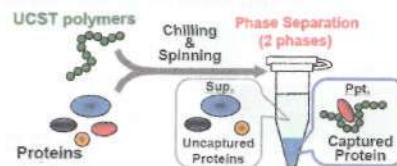
Ying Wang, Chun-Yan Hong,\* and Cai-Yuan Pan\*



dx.doi.org/10.1021/bm4003078

**Design of UCST Polymers for Chilling Capture of Proteins**

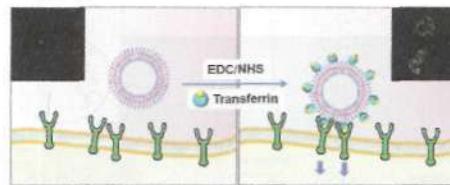
Naohiko Shimada, Miki Nakayama, Arihiro Kano, and Atsushi Maruyama\*



dx.doi.org/10.1021/bm400120y

**Endocytosis and Intracellular Trafficking Properties of Transferrin-Conjugated Block Copolyptide Vesicles**

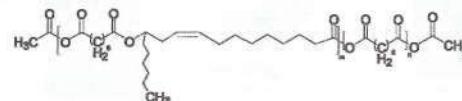
Uh-Joo Choe, April R. Rodriguez, Brian S. Lee, Scott M. Knowles, Anna M. Wu, Timothy J. Deming, and Daniel T. Kamei\*



dx.doi.org/10.1021/bm400124z

**In Vivo Degradation and Elimination of Injectable Ricinoleic Acid-Based Poly(ester-anhydride)**

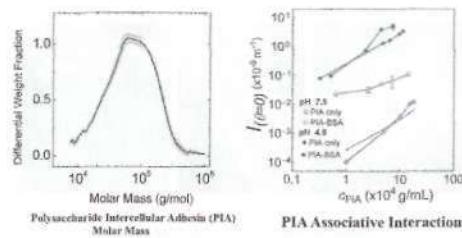
Boris Vaismann, Diana E. Ickowicz, Ester Abtew, Moran Haim-Zada, Ariella Shikanov, and Abraham J. Domb\*



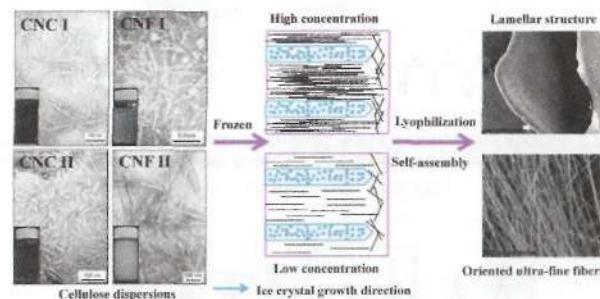
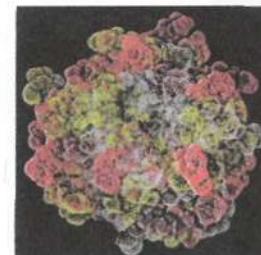
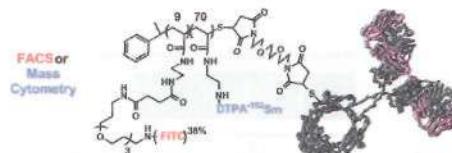
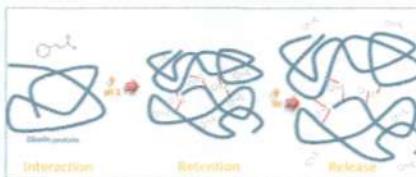
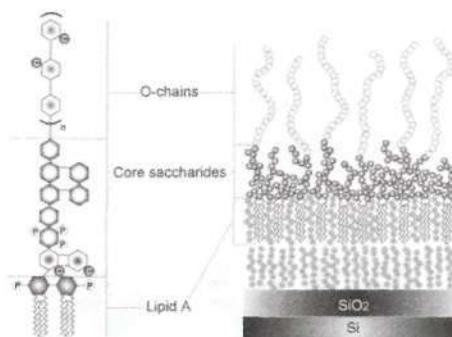
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**Molar Mass, Entanglement, and Associations of the Biofilm Polysaccharide of *Staphylococcus epidermidis***

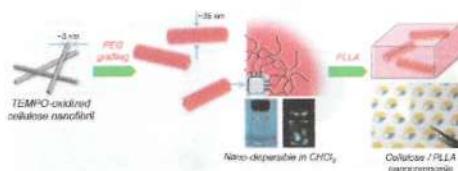
Mahesh Ganesan, Elizabeth J. Stewart, Jacob Szafranski, Ashley E. Satorius, John G. Younger, and Michael J. Solomon\*



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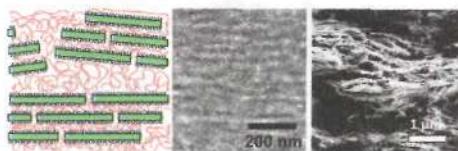


Surface Engineering of Ultrafine Cellulose Nanofibrils toward Polymer Nanocomposite Materials  
Shuji Fujisawa, Tsuguyuki Saito, Satoshi Kimura, Tadahisa Iwata, and Akira Isogai\*



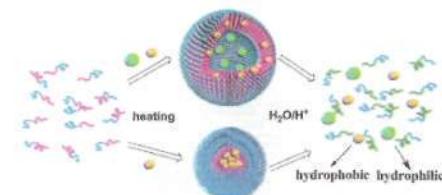
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Transition to Reinforced State by Percolating Domains of Intercalated Brush-Modified Cellulose Nanocrystals and Poly(butadiene) in Cross-Linked Composites Based on Thiol–ene Click Chemistry  
Henna Rosilo, Eero Kontturi, Jani Seitsonen, Erkki Kolehmainen, and Olli Ikkala\*



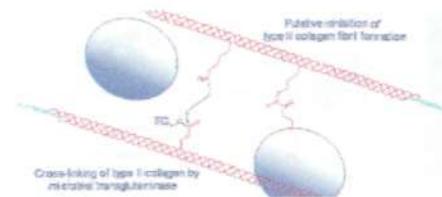
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Polymerosomes from Dual Responsive Block Copolymers: Drug Encapsulation by Heating and Acid-Triggered Release  
Zeng-Ying Qiao, Ran Ji, Xiao-Nan Huang, Fu-Sheng Du,\* Rui Zhang, De-Hai Liang, and Zi-Chen Li\*



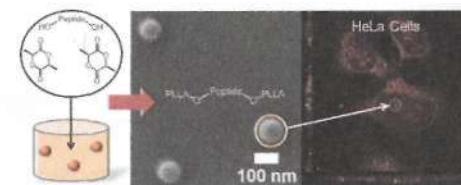
[dx.doi.org/10.1021/bm400180n](https://doi.org/10.1021/bm400180n)

Identification of Transglutaminase Substrates from Porcine Nucleus Pulposus as Potential Amplifiers in Cross Linking Cell Collagen  
Elke Gebauer, Elke Goßla, Carolin Kwas, Denise Salzig, Alexandra Schmiermund, Peter Czermak, and Hans-Lothar Fuchsbauer\*



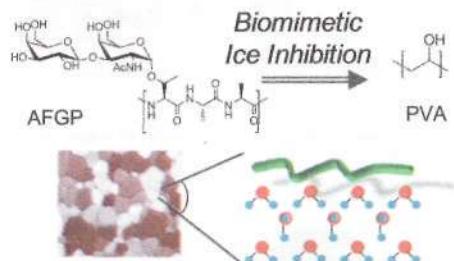
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Biocompatible Polylactide-block-Polypeptide-block-Polylactide Nanocarrier  
Robert Dorresteijn, Ruben Ragg, Gianluca Rago, Nils Billecke, Mischa Bonn, Sapun H. Parekh, Glauco Battagliarin, Kalina Peneva, Manfred Wagner, Markus Klapper,\* and Klaus Müllen



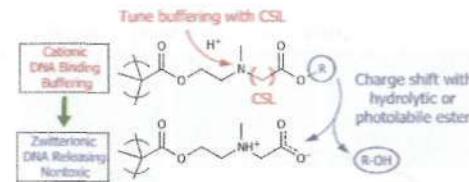
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Antifreeze (Glyco)protein Mimetic Behavior of Poly(vinyl alcohol): Detailed Structure Ice Recrystallization Inhibition Activity Study  
Thomas Congdon, Rebecca Notman, and Matthew I. Gibson\*



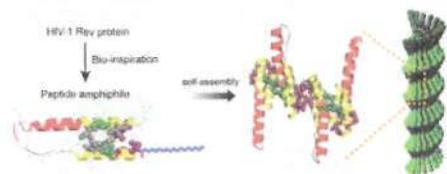
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Engineering Buffering and Hydrolytic or Photolabile Charge Shifting in a Polycarboxybetaine Ester Gene Delivery Platform  
Andrew Sinclair, Tao Bai, Louisa R. Carr, Jean-Rene Ella-Meny, Lei Zhang, and Shaoyi Jiang\*



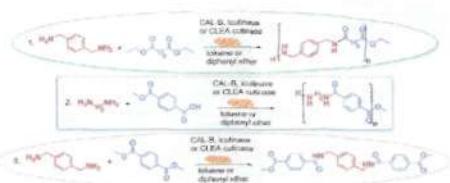
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Bioinspired Self-Assembled Peptide Nanofibers with Thermostable Multivalent  $\alpha$ -Helices  
So-hee Han, Mun-kyung Lee, and Yong-beom Lim\*



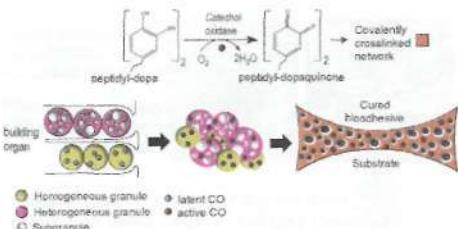
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Enzyme-Catalyzed Synthesis of Aliphatic–Aromatic Oligoamides  
E. Stavila, G. O. R. Alberda van Ekenstein, and K. Loos\*



dx.doi.org/10.1021/bm400243a

Multipart Copolyelectrolyte Adhesive of the Sandcastle Worm, *Phragmatopoma californica* (Fewkes): Catechol Oxidase Catalyzed Curing through Peptidyl-DOPA  
Ching Shuen Wang and Russell J. Stewart\*



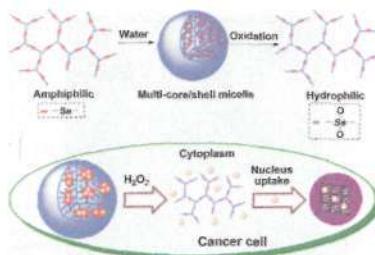
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Inflammation-Responsive Antioxidant Nanoparticles Based on a Polymeric Prodrug of Vanillin  
Jeongil Kwon, Jihye Kim, Seunggyu Park, Gilson Khang, Peter M. Kang, and Dongwon Lee\*



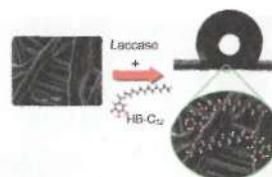
dx.doi.org/10.1021/bm400256h

Therapeutic Nanocarriers with Hydrogen Peroxide-Triggered Drug Release for Cancer Treatment  
Jinyao Liu, Yan Pang, Zhaoyang Zhu, Dali Wang, Chunting Li, Wei Huang,\* Xinyuan Zhu, and Deyue Yan\*



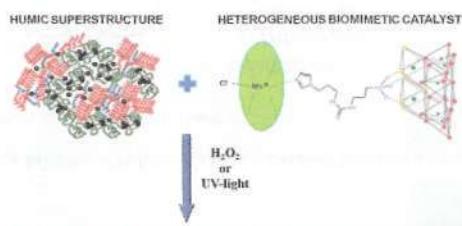
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Laccase-Mediated Coupling of Nonpolar Chains for the Hydrophobization of Lignocellulose  
Jordi Garcia-Ubasart, Teresa Vidal,\* Antonio L. Torres, and Orlando J. Rojas\*



dx.doi.org/10.1021/bm400291s

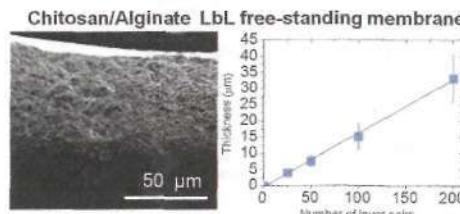
Oxidative and Photooxidative Polymerization of Humic Suprastructures by Heterogeneous Biomimetic Catalysis  
Assunta Nuzzo and Alessandro Piccolo\*

*Oxidative Polymerization of Humic Molecules*

dx.doi.org/10.1021/bm400300m

Free-Standing Polyelectrolyte Membranes Made of Chitosan and Alginate  
Sofia G. Caridade, Claire Monge, Flora Gilde, Thomas Boudou, João F. Mano,\* and Catherine Picart\*

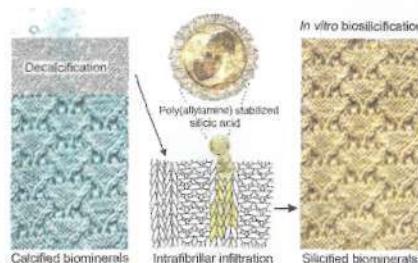
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Biomimetic Silicification of Demineralized Hierarchical Collagenous Tissues

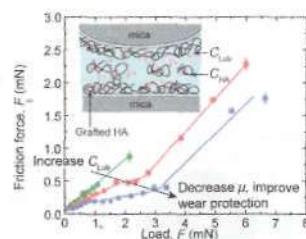
Li-na Niu, Kai Jiao, Heonjune Ryoo, Anibal Diogenes, Cynthia K. Y. Yiu, Annalisa Mazzoni, Ji-hua Chen,\* Dwayne D. Arola, Kenneth M. Hargreaves, David H. Pashley, and Franklin R. Tay\*

[dx.doi.org/10.1021/bm400316e](https://doi.org/10.1021/bm400316e)



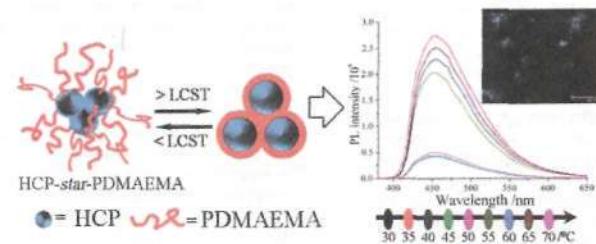
Synergistic Interactions between Grafted Hyaluronic Acid and Lubricin Provide Enhanced Wear Protection and Lubrication  
Saurabh Das, Xavier Banquy, Bruno Zappone, George W. Greene, Gregory D. Jay, and Jacob N. Israelachvili\*

[dx.doi.org/10.1021/bm400327a](https://doi.org/10.1021/bm400327a)



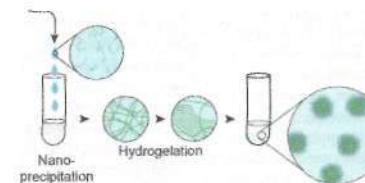
Temperature-Induced Emission Enhancement of Star Conjugated Copolymers with Poly(2-(dimethylamino)ethyl methacrylate) Coronas for Detection of Bacteria  
Feng Qiu, Dali Wang, Ruibin Wang,\* Xiuying Huan, Gangsheng Tong, Qi Zhu, Deyue Yan, and Xinyuan Zhu\*

[dx.doi.org/10.1021/bm4003317](https://doi.org/10.1021/bm4003317)



Poly(vinyl alcohol) Physical Hydrogel Nanoparticles, Not Polymer Solutions, Exert Inhibition of Nitric Oxide Synthesis in Cultured Macrophages  
Sidsel Ø. Andreassen, Siow-Feng Chong, Benjamin M. Wohl, Kenneth N. Goldie, and Alexander N. Zelikin\*

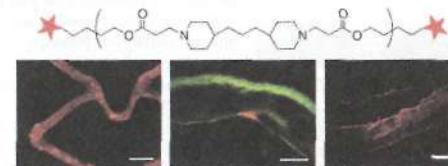
[dx.doi.org/10.1021/bm400369u](https://doi.org/10.1021/bm400369u)



Polyelectrolyte Multilayers Promote Stent-Mediated Delivery of DNA to Vascular Tissue

Eric M. Saurer, Christopher M. Jewell, Drew A. Roenneburg, Shane L. Bechler, Jose R. Torrealba, Timothy A. Hacker,\* and David M. Lynn\*

[dx.doi.org/10.1021/bm400522d](https://doi.org/10.1021/bm400522d)



1705

**Selective Permeation of Hydrogen Gas Using Cellulose Nanofibril Film**

Hayaka Fukuzumi, Shuji Fujisawa, Tsuguyuki Saito, and Akira Isogai\*

[dx.doi.org/10.1021/bm400377e](https://doi.org/10.1021/bm400377e)

## Additions and Corrections

1710

[dx.doi.org/10.1021/bm400411x](https://doi.org/10.1021/bm400411x)**Correction to Ionically Gelled Alginate Foams: Physical Properties Controlled by Operational and Macromolecular Parameters**

Therese Andersen,\* Jan Egil Melvik, Olav Gåserød, Eben Alsberg, and Bjørn E. Christensen