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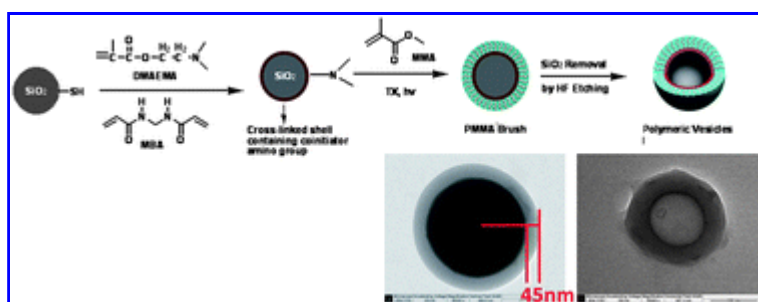
## Archive for the 'Hot article' Category

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### [Hot Article: Polymeric vesicles with well-defined poly\(methyl methacrylate\) \(PMMA\) brushes via surface-initiated photopolymerization \(SIPP\)](#)

07 Feb 2011

Chinese scientists have developed a new way to fabricate polymeric vesicles with well-defined PMMA brushes using silica particles as templates by surface-initiated photopolymerization (SIPP).



A cross-linked layer of PDMAEMA was immobilised on the surface of silica particles before photo-initiated polymerisation of methyl methacrylate in the presence of thioxanthone generated PMMA brushes on the vesicles. Removal of the silica cores yielded polymeric vesicles with well-defined PMMA brushes. This robust approach shows great potential for the fabrication and modification of polymer vesicles with different sizes and functions.

**Interested to know more?** Why not read the full article for free: [Fengting Chen, Xuesong Jiang, Rui Liu and Jie Yin, \*Polym. Chem.\*, 2011, DOI: 10.1039/C0PY00288G \(Advance Article\)](#)

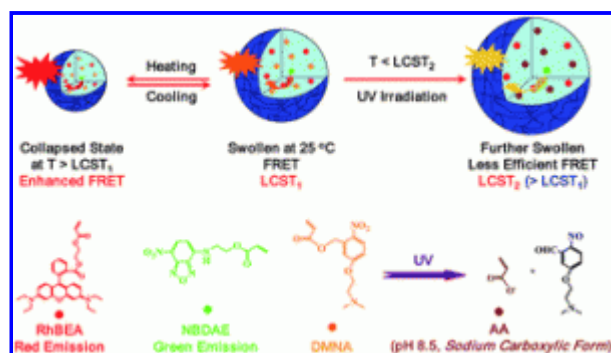


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[Hot Article: Thermo- and light-regulated fluorescence resonance energy transfer processes within dually responsive microgels](#)

02 Feb 2011

Thermo- and light-responsive microgels have been made *via* free radical emulsion polymerisation by researchers from *University of Science and Technology of China*.



The p(NIPAM–DMNA–NBDAB–RhBEA) microgels swelled and collapsed in response to changes in temperature below and above the lower critical solution temperatures (LCSTs), respectively. This reversibly brought the FRET donors (NBDAB) and rhodamine B-based acceptors (RhBEA) into close proximity, allowing tuning of the FRET efficiencies. UV irradiation could also adjust the LCST of the microgels, yielding a dually responsive system.

**Interested to know more?** Why not read the full article for free: [Jun Yin, Haibo Hu, Yonghao Wu and Shiyong Liu, \*Polym. Chem.\*, 2011, 2, 363–371](#)

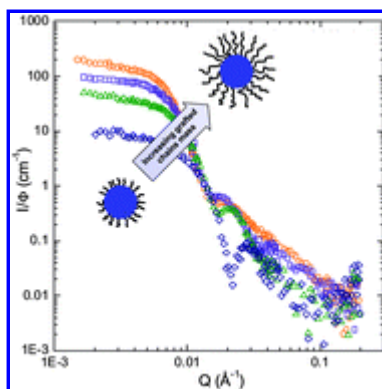


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## [Hot Article: Controlled grafting of polystyrene on silica nanoparticles using NMP: a new route without free initiator to tune the grafted chain length](#)

13 Jan 2011

Polystyrene-grafted silica nanoparticles have been synthesised without using a free initiator by a team of French scientists.



The masses of the grafted chains could be controlled, thus controlling the polymerisation and colloidal stability. This new method avoids the formation of free polymer chains through the use of free nitroxide in the polymerisation step and could find many potential applications in, for example, the field of nanocomposites.

Interested to know more? Why not read the full article for free:

[Chloé Chevigny, Didier Gimes, Denis Bertin, Ralf Schweins, Jacques Jestin and François Boué, \*Polym. Chem.\*, 2011, DOI: 10.1039/C0PY00271B \(Advance Article\)](#)

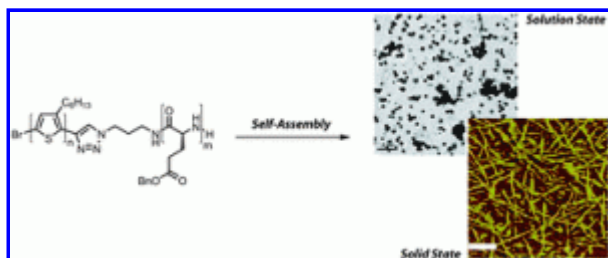


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## [Hot Article: Polythiophene–block–poly\( \$\gamma\$ -benzyl L-glutamate\): synthesis and study of a new rod–rod block copolymer](#)

06 Jan 2011

A variety of block copolymers that self assemble into hierarchal structures in solution as well as in the solid state have been created by a team of US and Chinese scientists.



The block copolymers contained poly(3-hexylthiophene) and poly( $\gamma$ -benzyl L-glutamate) and were created from a straightforward procedure in good yield and with high purity. Polymers based on this chemistry could be suitable for organic photovoltaic applications the team claim.

**Interested to know more? Why not read the full article for free:**

[Zong-Quan Wu, Robert J. Ono, Zheng Chen, Zicheng Li and Christopher W. Bielawski, \*Polym. Chem.\*, 2011, DOI: 10.1039/C0PY00299B \(Advance Article\)](#)



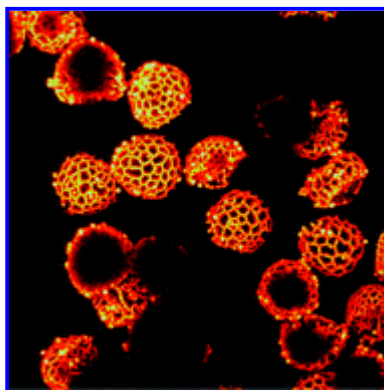


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## [Hot Article: Hybrid biological spores wrapped in a mesh composed of interpenetrating polymer nanoparticles as “patchy” Pickering stabilizers](#)

23 Dec 2010

A new method for decorating spores with polymer nanoparticles to create an intricate surface morphology has been developed by scientists at the *University of Warwick, UK*.



Nicholas Ballard and Stefan Bon investigated the behaviour of these hybrid particles at the liquid–liquid interfaces. The particles show very different behaviour from their spherical analogues which shows that roughness of the surface matters.

Read the full article here: [Nicholas Ballard and Stefan A. F. Bon, \*Polym. Chem.\*, 2011, DOI: 10.1039/C0PY00335B](#)

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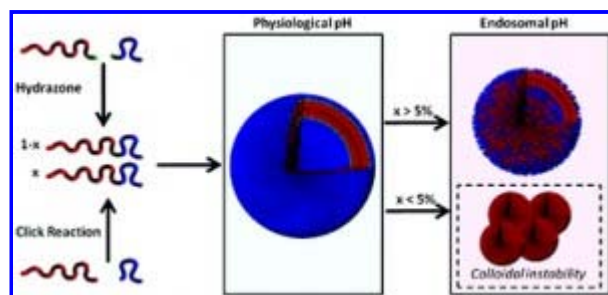
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## [Hot Article: Shedding the hydrophilic mantle of polymersomes](#)

01 Dec 2010

Polymersomes that shed their poly(ethylene glycol) shell have been developed by scientists at Radboud University Nijmegen, The Netherlands.

The polymersomes are formed from block copolymers of polybutadiene-*b*-poly(ethylene glycol) coupled *via* an acid sensitive hydrazone moiety. The team found that the minimum amount of surface PEGylation needed to retain stable polymersomes was as low as five percent.



Interested to know more? Why not read the full article for free here: [René P. Brinkhuis\\*](#), [Taco R. Visser](#), [Floris P. J. T. Rutjes](#) and [Jan C. M. van Hest](#), *Polym. Chem.*, 2011, DOI:10.1039/C0PY00316F

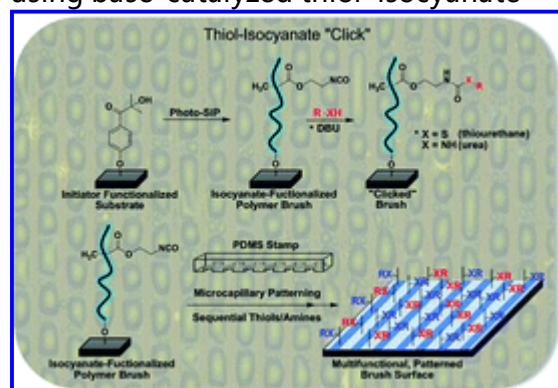


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## [Hot Article: Thiol–isocyanate “click” reactions: rapid development of functional polymeric surfaces](#)

23 Nov 2010

Functional, micropatterned and multicomponent polymer brush surfaces were rapidly fabricated using base-catalyzed thiol–isocyanate “click” reactions, by a team of US Scientists.



The team led by Derek Patton at the University of Southern Mississippi, USA, demonstrated thiol–NCO click chemistry can be used as a modular platform for rapid and robust fabrication of highly functional, multicomponent surfaces. The team expect that this approach can be extended to a broad range of surfaces, including three-dimensional particle substrates.

Interested to know more? Why not read the full communication available for free.

[Ryan M. Hensarling, Santosh B. Rahane, Arthur P. LeBlanc, Bradley J. Sparks, Evan M. White, Jason Locklin and Derek L. Patton, \*Polym. Chem.\*, 2011, DOI:10.1039/C0PY00292E](#)

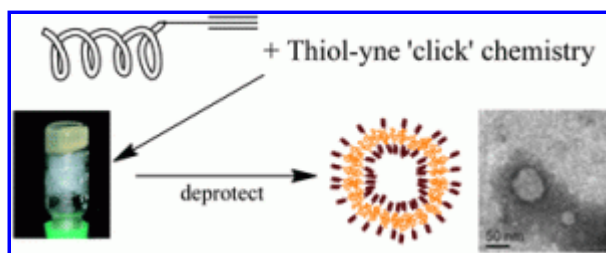


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## [Hot Article: Thiol-yne 'click' chemistry as a route to functional lipid mimetics](#)

19 Nov 2010

Thiol-yne chemistry is an efficient mechanism to synthesize A<sub>2</sub>B star polymers. In the latest *Polymer Chemistry* Hot Article, Daniel Savin and co-workers at University of Southern Mississippi, USA, report the synthesis and solution characterization of polypeptide-based stars that serve as lipid mimetic molecules.



Using the thiol-yne convergent synthesis, the team envision a modular approach to functionalize proteins or oligopeptides with lipophilic chains that can imbed seamlessly into a cell membrane.

**Fancy knowing more? Why not read the full article for free here:**

[Sandeep S. Naik, Justin W. Chan, Christopher Comer, Charles E. Hoyle and Daniel A. Savin, \*Polym. Chem.\*, 2011, DOI: 10.1039/C0PY00231C](#)

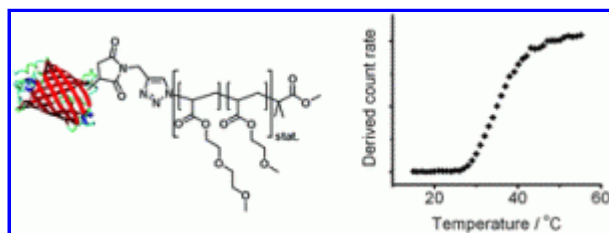


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## [Hot Article: Thermoresponsive giant biohybrid amphiphiles](#)

08 Nov 2010

Jeroen Cornelissen and co-workers at Radboud University Nijmegen and the University of Twente created a series of thermoresponsive giant biohybrid amphiphiles.



The polymer component was a random copolymer of ethylene glycol methyl ether acrylate and methoxy ethoxy ethyl acrylate formed by atom transfer radical polymerisation. The team linked the hydrophobic polymer to enhanced green fluorescent protein using a copper-catalysed azide–alkyne cycloaddition. Slow heating allows the giant amphiphiles to self-assemble into spherical micelles with a diameter of approximately 60 nm.

**Interested to know more? Read the full article for free here:** [Christine Lavigueur, Jordi González García, Linda Hendriks, Richard Hoogenboom, Jeroen J. L. M. Cornelissen and Roeland J. M. Nolte, \*Polym. Chem.\*, 2011, DOI:10.1039/COPY00229A](#)

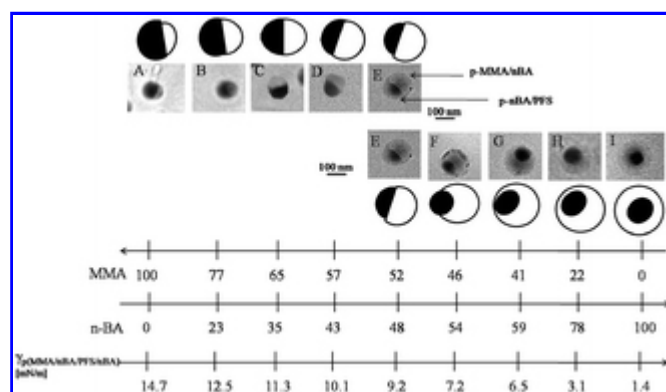


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## [Hot Article: Shape evolution control of phase-separated colloidal nanoparticles](#)

02 Nov 2010

In the latest *Polymer Chemistry* Hot Article, Cathrin Corten and Marek Urban at the University of Southern Mississippi, USA, investigate the evolution of shape in colloidal particles. In the paper they study colloidal nanoparticle made from two phase-separated copolymers poly(methylmethacrylate) (p-MMA)/n-butylacrylate (nBA) and poly(nBA)/pentafluorostyrene (p-PFS).



These studies show for the first time that the synthesis of two distinct phase-separated copolymers within one colloidal nanoparticle allows control of the nanoparticle morphology by compositional and interfacial adjustments.

Interested to know more? Why not read the full article for free here: [Cathrin C. Corten and Marek W. Urban, \*Polym. Chem.\*, 2011, DOI:10.1039/C0PY00220H](#)



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