

Presentation title:

**CO₂-switchable Surfactants and Polymers:
A Tale of Two Smart Soft Materials**

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Yujun FENG is now serving as a professor at the Polymer Research Institute, State Key Laboratory of Polymer Materials Engineering, Sichuan University, P. R. China.

After earning his PhD in applied chemistry from Southwest Petroleum University, China, in 1999, he moved to France to undertake his post-doctoral researches at the Laboratoire de Physico-Chimie des Polymères, CNRS/Université de Pau, France, working with Mme. Jeanne François, M. Bruno Grassl, and M. Laurent Billon, and at the Institut Français du Pétrole (IFP) with M. Guy Chauvetau, M. Alain Zaitoun and M. René Tabary. In 2004, he joined in the Chengdu Institute of Organic Chemistry, Chinese Academy of Sciences, and has been serving as a team leader since then. In September 2012, he was reallocated to Sichuan University where he has been focusing on smart soft materials including polymers and surfactants and their applications in oil and gas industry.

Prof. Feng holds 8 Chinese patents, and has published 124 papers in peer-reviewed, SCI-indexed international journals with h-index 31. He was also invited keynote speakers in the International Symposium on “Surfactants in Solution” (Coimbra, 2014; Jinan, 2016), International Symposium on Colloid and Interface (Amsterdam, 2015), “Colloid UK” (London, 2014), “European Association of Colloid and Interface Science” (Ljubljana, 2018), as well as the annual conferences of Canadian Society of Chemistry (Ottawa, 2015) and American Chemical Society (Washington, D. C., 2017).

Prof. Feng serves as associate editors for “*Current Opinion in Colloid and Interface Science*” (Elsevier), “*RSC Advances*” (RSC) and “*Journal of Surfactants and Detergents*” (Springer), as well as a guest co-editors for “*ChemPhysChem*” (Wiley) on the special issue “Smart Materials” (2018), and for “*Journal of Chemistry*” on “Chemically Enhanced Oil Recovery” themed issue (2013). He also serves as a committee member for the biennial SPE (Society of Petroleum Engineers) Oilfield Chemistry symposium since 2015.

Books

1. **Yujun Feng**, Zonglin Chu, Cécile A. Dreiss. Smart wormlike micelles: design, characteristics and applications. Springer, February 2015. ISBN: 978-3-662-45949-2 (Print) 978-3-662-45950-8 (Online)
2. Cécile A. Dreiss. **Yujun Feng**, eds. Wormlike micelles: new systems, advances in characterisation and applications. RSC, March 2017. Print ISBN: 978-1-78262-516-2; PDF eISBN: 8-1-78262-978-8; EPUB eISBN: 978-1-78801-121-1; DOI: 10.1039/9781782629788

Selected Papers

1. Qirui Tian, Chenhong Fei, Hongyao Yi, **Yujun Feng***. Stimuli-Responsive Polymer Wormlike Micelles. *Prog. Polym. Sci.*, under revisions
2. Xinjie Luo, Hongyao Yin, Xian'e Li, Xin Su, **Yujun Feng***. CO₂-triggered microreactions in liquid marbles. *Chem. Commun.*, 2018, minor revisions
3. Pengfei Zheng, Xin Su, Chenhong Fei, Xiaohuo Shi, Hongyao Yin, **Yujun Feng*** Deep insights into the hydrolysis of N,N-dialkylaminoethyl methacrylates in aqueous solution with ¹H NMR spectroscopy. *J. Polym. Sci., Part B: Polym. Phys.*, 2018, 56: 914–923
4. Hongyao Yin, Yujun Feng*, Laurent Billon*. Directed self-assembly in “breath figure” templating of melamine-based amphiphilic copolymers: effect of hydrophilic molecular length end-chain on honeycomb film formation and wetting. *Chem. – Eur. J.*, 2018, 24(2): 425–433
5. Hanbin Liu, Shaojian Lin, **Yujun Feng***, Patrick Theato*. CO₂-responsive polymer materials. *Polym. Chem.*, 2017, 8(1): 12–23
6. Hongyao Yin, Anne-Laure Bulteau, **Yujun Feng***, Laurent Billon*. CO₂-induced tunable and reversible surface wettability of honeycomb structured porous films for cell adhesion. *Adv. Mater. Interfaces*, 2016, 3(7): <https://doi.org/10.1002/admi.201500623>
7. Wei Wang, Hanbin Liu, Meng Mu, Hongyao Yin, **Yujun Feng***. CO₂-induced reversible morphology transition from giant worms to polymersomes assembled from a block-random segmented copolymer. *Polym. Chem.*, 2015, 6: 2900–2908
8. Hanbin Liu, Zanru Guo, Shuai He, Hongyao Yin, Chenhong Fei, **Yujun Feng***. CO₂-driven vesicles to micelle regulation of amphiphilic copolymer: random versus block strategy. *Polym. Chem.*, 2014, 5(16): 4756–4763
9. Zonglin Chu, Cécile A. Dreiss, **Yujun Feng***. Smart wormlike micelles. *Chem. Soc. Rev.*, 2013, 42(17): 7174–7203
10. Zanru Guo, **Yujun Feng***, Dingwei Zhu, Shuai He, Hanbin Liu, Xiangrong Shi, Jing Sun, Meizhen Qu. Light-switchable single-walled carbon nanotubes based on host-guest chemistry. *Adv. Funct. Mater.*, 2013, 23(40): 5010–5018 (Frontispiece work)
11. Yongmin Zhang, **Yujun Feng***, Jiyu Wang, Shuai He, Zanru Guo, Zonglin Chu and Cécile A. Dreiss*. CO₂-switchable wormlike micelles. *Chem. Commun.*, 2013, 49: 4902–4904
12. Zanru Guo, **Yujun Feng***, Shuai He, Meizhen Qu, Honglin Chen, Hanbin Liu, Yufeng Wu, Yu Wang. CO₂-responsive “smart” single-walled carbon nanotubes. *Adv. Mater.*, 2013, 25(4): 584–590
13. Zanru Guo, **Yujun Feng***, Yu Wang, Jiyu Wang, Yufeng Wu, Yongmin Zhang. A novel smart polymer responsive to CO₂. *Chem. Commun.*, 2011, 47(33): 9348–9350
14. Zonglin Chu, **Yujun Feng***. Thermo-switchable surfactant gel. *Chem. Commun.*, 2011, 47(25): 7191–7193
15. Zonglin Chu, **Yujun Feng***. pH-switchable wormlike micelles. *Chem. Commun.*, 2010, 46(47): 9028–9030