

## Curriculum Vitae Hefeng Zhang

### Personal information

Hefeng Zhang was born in Puyang city, China in September, 1982.

**Citizenship:** Chinese

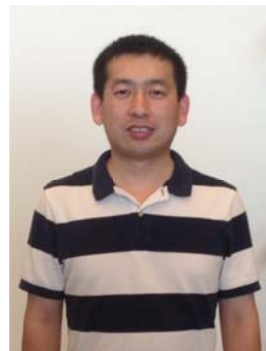
**Language:** Chinese, English

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### Education experience

- 10/2012 ---** Postdoctoral Fellow in King Abdullah University of Science and Technology, Saudi Arabia  
with Prof. Nikos Hadjichristidis
- 9/2008 --- 6/2012** Ph.D. in Polymer Chemistry and Physics in Fudan University, Shanghai, China  
Ph. D. Thesis: “Continuous/Iterative synthesis of dendrimer-like (*co*)polymers by anionic polymerization”  
Supervisor: Prof. Junpo He.
- 9/2005 --- 6/2008** M.S. in Polymer Chemistry and Physics in Henan University, Kaifeng, China  
M.S. Thesis: “Synthesis of chitosan supported L-proline and its catalytic capacities for direct asymmetric aldol and Henry reaction”  
Supervisor: Prof. Yuanchen Cui
- 9/2001 --- 6/2005** B.S. in Chemical Engineering and Technology in Henan University, Henan, China

### Research Experience

During the Ph.D period, a fast and continuous strategy to synthesize dendrimer-like polymers was developed by using anionic polymerization. Various dendrimer-like copolymers with different chemical segments were synthesized in one pot. In another piece of work, an iterative “end-grafting” method was employed to synthesize dendrimer-like polymers with high branching functionality. The highly branched products were used to study the “dendrimer effect” in solution endowed by their dendritic architectures,

subsequently. Further, to better understand attribution of dendritic architecture to properties of polymers, dendritic brush polymers were prepared by the “end-grafting” method.

For M.S., chitosan microsphere was synthesized and was applied as an environment-friendly heterogeneous catalyst for the Heck reaction after supporting palladium, which surprisingly showed good performance in water. In another piece of work, chitosan was chemically modified by L-proline and the resulting products were used as macro-organocatalysts for the direct asymmetric aldol reaction.

#### **Characterization and Analysis Techniques:**

Size exclusion chromatography (SEC), high-performance liquid chromatography (HPLC), gas chromatography–mass spectrometry (GC-MS), nuclear magnetic resonance spectroscopy (NMR), static and dynamic light scattering (SLS/DLS), atomic force microscopy (AFM), differential scanning calorimetry (DSC), Differential thermal analysis (DTA), infrared spectroscopy (IR), UV-VIS spectroscopy, X-ray diffraction (XRD), optical microscopy, transmission electron microscopy (TEM).

#### **Publications:**

1. **Zhang, Hefeng**; Zhu, Jian; He, Junpo; Qiu, Feng; Zhang, Hongdong; Yang, Yuliang; Lee, Hyojoon; Chang, Taihyun. “Easy synthesis of dendrimer-like polymers through a divergent iterative “end-grafting” method” *Polym. Chem.*, **2013**, *4*, 830-839
2. **Zhang, Hefeng**; He, Junpo; Zhang, Chao; Ju, Zhenhua; Li, Jia; Yang, Yuliang. “Continuous Process for the Synthesis of Dendrimer-like Star Polymers by Anionic Polymerization” *Macromolecules* **2012**, *45*, 828-841
3. **Zhang, Hefeng**; Zhao, Wenshan; Zou, Jun; Liu, Yi; Runtao; Cui Yuanchen. “Aldol Reaction Catalyzed by a Hydrophilic Catalyst in Aqueous Micelle as an Enzyme Mimic System” *Chirality* **2009**, *21*, 492-496
4. **Zhang, Hefeng**; Zhang, Lei; Cui, Yuanchen. “Synthesis of chitosan microsphere-resin supported palladium complex and its catalytic properties for Mizoroki–Heck reaction” *Reactive and Functional Polymers* **2007**, *67*, 322-328
5. Cui, Yuanchen; **Zhang, Hefeng**; Li, Runtao; Liu, Yi; Xu, Chu. Asymmetric Henry Reaction Catalyzed by Chitosan and Its L-Proline Derivative. *Chinese Journal of Organic Chemistry* **2010**, *30*, 707-712

#### **Awards:**

- 2010: The second grade scholarship from Fudan University;  
2009: The second grade scholarship from Fudan University; The Excellent thesis of Henan University  
2008: The excellent graduate of Henan Province

**Current research interest:**

1. Synthesis of substituted methylene by using polyhomologation techniques;
2. Synthesis of polyethylene-contained copolymers with well-defined architecture by combining anionic polymerization and polyhomologation;
3. Synthesis of well-defined complex conjugated copolymers by using anionic polymerization.