

CURRICULUM VITAE

Name: Prof.Dr.De-Yi Wang



PROFESSION: Polymer Nanocomposite Scientist/Fire-Retardant Material Specialist

ACADEMIC DEGREE: PhD in Polymer Chemistry and Physics

KEY QUALIFICATIONS

BS (*First Class*, Applied Chemistry in Sichuan University of China) 1998-2002

PhD (*First Class*, Polymer Chemistry and Physics in Sichuan University of China) 2003-2007

Visiting Research Fellow (UK, Polymer nanocomposite) 2006

Postdoctoral Research Fellow (Germany, IPF, Polymer nanocomposite) 2008-2009

Alexander Humboldt Research Fellow (Germany, AvH, Polymer nanocomposite) 2009

Associate Professor (Flame Retardant Material and Nanostructure, SCU) 2009

DuPont Young Professor Awards (USA, Polymer nanocomposite) 2010

Guest Professor in Leibniz Institute of Polymer Research Dresden(IPF), Germany, Since 2010

As the Member on Editorial Board, Prof.Dr.De-Yi Wang is serving for 5 international journals.

As the reviewers, serving for more than 10 international prestigious journals.

CURRENT Position and ADDRESS

Guest Professor in Leibniz Institute of Polymer Research in Dresden,
Germany

&

Associate Professor in Flame Retardant Materials and Nanostructure in
Sichuan University (SCU), China

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Website: <http://www.ipfdd.de/Wang.2061.0.html?L=0>

Academic/Professional Awards

Sep 2011 The grant for participating the United Nations OPCW conferences and
Speaker (Hague, Netherlands)

July 2010 National Award for Technological Invention. China

July 2010 Guest Professor in Leibniz Institute of Polymer Research, Germany

June 2010 DuPont Young Professor Awards. USA

June 2010 International Foundation for Science grant (2nd) for Most Excellent Young
Scientist from Developing Counties. Sweden

Feb. 2010 First-class Technological Invention Prizes of Chinese Ministry of Education. China
2009 Alexander Humboldt Research Fellowship from AvH, Germany
Sep. 2007 International Foundation for Science grant (1st) for Most Excellent Young Scientist from Developing Countries. Sweden
Nov. 2007 Excellent Doctoral Dissertation of Sichuan province, China
June 2007 China Young People's Science & Technology Innovation Prize, China.
June 2006 Visiting Research Fellowship of University of Bolton, Manchester, UK

SPECIALISATION IN PRESENT AND PROFESSIONAL EXPERIENCE

Prof.Dr.De-Yi Wang's research activities focus on fundamental problems and novel technologies in environmental-friendly polymeric material (especially bio-based polymers, eg. Polylactic acid (PLA), bio-rubber, etc), layered nanostructure materials, fire retardant high performance polymeric materials and their nanocomposites (eg. bio-based and/or petro-based Polymer as polymer matrix), including innovative chemistry to synthesis novel functional inorganic layered nanostructure particles, like layered double hydroxide (LDH), novel high performance polymers and their nanocomposites, novel methods to evaluate fire behaviours of materials and the analytical research of their action mechanism.

In recent years, Prof.Dr.De-Yi Wang has published more than 50 academic articles on the prestigious international peer-reviewed journals, such as *Chemistry of Materials*, *Macromolecular*, *Langmuir*, *Journal of Materials Chemistry*, *Advances in Polymer Science*, *Acta Material*, *Polymer*, *Polymer Degradation and Stability*, *European Polymer Journal*, etc, and applied for 16 invention patents. He was invited to have oral presentations on the international academic conferences many times. As a leading author, he was invited to write one book chapter (Polyolefin nanocomposites with layer double hydroxides) in *Advances in Polyolefin Nanocomposite*, Taylor & Francis Press.2010.

Publications

Part articles in journals/contributions to books

1. De-Yi Wang*, Francis Costa, Anastasia Vyalikh, Andreas Leuteritz, Ulrich Scheler, Dieter Jehnichen, Udo Wagenknecht, Liane Häußler, Heinrich, Gert. One-step Synthesis of Organic LDH and Its Comparison with Regeneration and Anion Exchange Method. *Chemistry and Materials*. 2009, 21 □ 19 □ 4490-4497.
2. De-Yi Wang*, Amit Das, Fransis Reny Costa, Andreas Leuteritz, Udo Wagenknecht, Gert Heinrich. Synthesis of organo Co–Al layered double hydroxide via a novel single step self-assembling method and its use as flame retardant nanofiller in PP. *Langmuir*, 2010,26(17),14162-14169.

3. Amit Das, De-Yi Wang*, Andreas Leuteritz, Kalaivani Subramaniam, H.Chris Greenwell, Udo Wagenknecht and Gert Heinrich*. Preparation of zinc oxide free, transparent rubber -nanocomposites using a layered double hydroxide filler material. *J. Mater. Chem.* 2011, 7194-7200.
4. Purohit, P. J.; Sanchéz, J. H.; Wang, De-Yi*; Emmerling, F.; Thünemann, A.; Heinrich, G.; Schönhals*, A. Structure-property relationships of nanocomposites based on polypropylene and layered double hydroxides more *Macromolecules* 44 (2011) 4342-4354.
5. De-Yi Wang, Yan-Peng Song, Ling Lin, Xiu-Li Wang, Yu-Zhong Wang. A Novel Phosphorus-Containing Poly (lactic acid) toward its Flame Retardation. *Polymer*, 2011, 52(2) 233-238.
6. De-Yi Wang*, Andreas Leuteritz, Yu-Zhong Wang, Udo Wagenknecht, Gert Heinrich. Preparation and burning behaviours of flame retarding biodegradable poly(lactic acid) nanocomposite based on zinc aluminium layered double hydroxide. *Polym. Degrad. Stab.* 2010, 95(12), 2474-2480
7. De-Yi Wang*, Amit Das, Andreas Leuteritz, Regine Boldt, Liane Häußler, Udo Wagenknecht, Gert Heinrich*. Thermal degradation behaviors of a novel nanocomposite based on polypropylene and Co–Al layered double hydroxide. *Polym. Degrad. Stab.* 2011, 96, 285-290.
8. De-Yi Wang, Francis Reny Costa, Andreas Leuteritz, Andreas Schoenhals, Vyalikh Anastasia, Ulrich Scheler, Udo Wagenknecht, Burak Kutlu, Gert Heinrich. Polyolefin nanocomposites with layer double hydroxides (Book Chapter) in *Advances in Polyolefin Nanocomposite*, Taylor & Francis Press.2010.
9. De-Yi Wang, Xue-Qi Liu, Jun-Sheng Wang, Yu-Zhong Wang, Anna A. Stec, and T.Richard Hull. Preparation and characterisation of a novel fire retardant PET/ α -zirconium phosphate nanocomposite. *Polym. Degrad. Stab.* 2009, 94 (4).544-549.
10. De-Yi Wang*, Andreas Leuteritz, Maria Aufder Landwehr, Udo Wagenknecht, Gert Heinrich.Preparation and investigation of the combustion behaviour of Polypropylene /Organomodified MgAl-LDH micro-nanocomposite. *Journal of Alloys and Compounds.*2011, 509, 3497-3501.
11. De-Yi Wang, Yan-Peng Song, Jun-Shen Wang, Xin-Guo Ge , Yu-Zhong Wang, Anna A Stec, T. Richard Hull Double in-situ approach for the preparation of polymer nanocomposite with multi-functionality. *Nanoscale Research Letter* 2009, 4.303-306.
12. Xue-Qi Liu, De-Yi Wang*, Xiu-Li Wang, Li Chen, Yu-Zhong Wang* Synthesis organo-modified α -Zirconium phosphate and its effect on the flame retardancy of IFR poly (lactic acid) systems.doi:10.1016/j.polymdegradstab.2011.02.022
13. Yan-Peng Song, De-Yi Wang*, Xiu-Li Wang*, Ling Lin, Yu-Zhong Wang. A method for simultaneously improving the flame retardancy and toughness of PLA. *Polymer for Advanced Technology*,2011. DOI: 10.1002/pat.1760.
14. De-Yi Wang*, A. Leuteritz, U. Wagenknecht and G. Heinrich, Self-assembling

- organomodified Co/Al based layered double hydroxides (LDH) via one-step route *Trans.Nonferrous Met. Soc. China*, 2009, 1479-1482.
15. De-Yi Wang, Yun Liu, Yu-Zhong Wang, A. Anna Stec, T. Richard Hull, Dennis Price. Effect of metal chelates on the ignition and early flaming behaviour of intumescent fire-retarded polyethylene systems. *Polym. Degrad. Stab.* 2008, 93, (5).1024-1030.
 16. De-Yi Wang, Xiao-Xia Cai, Yun Liu, Jun-Sheng Wang, Yu-Zhong Wang. Preparation and flammability of a novel intumescent flame-retardant poly(ethylene-co-vinyl acetate) system. *Polym. Degrad. Stab.* 2008, 93(12):2186-2192.
 17. De-Yi Wang, Lian-Lian Wei, Xin-Guo Ge, Ke-Ke Yang, Xiu-Li Wang, Yu-Zhong Wang. Non-isothermal crystallization behaviors of flame-retardant copolyester/montmorillonite nanocomposites. *J. Macromol. Sci., Phys.* 2009, 48(5)927-940.
 18. De-Yi Wang, Yun Liu, Yu-Zhong Wang, C. Perdomo Artiles, T. Richard Hull, Dennis Price. Fire retardancy of a reactively extruded intumescent flame retardant polyethylene system enhanced by metal chelates *Polym. Degrad. Stab.* 2007, 92, 1592-1598.
 19. De-Yi Wang, Xin-Guo Ge, Yu-Zhong Wang, Chuan Wang, Ming-Hai Qu, Qian Zhou. A novel phosphorus-containing poly (ethylene terephthalate) nanocomposite with both flame retardancy and anti-dripping effects. *Macromol. Mater. Eng.* 2006, 291, 638-645.
 20. De-Yi Wang, Yu-Zhong Wang, Jun-Sheng Wang, Dan-Qi Chen, Qian Zhou, Bing Yang, Wei-Yi Li. Thermal oxidative degradation behaviors of flame-retardant copolyesters containing phosphorus linked pendent group/montmorillonite nanocomposites. *Polym. Degrad. Stab.* 2005, 87, 171-176.
 21. Vyalykh, A.; Wang, De-Yi; Wagenknecht, U.; Heinrich, G.; Scheler, U. Molecular dynamics in aluminum layered double hydroxides as studied by ¹H T1ρ NMR measurements. *Chemical Physics Letters* 509 (2011) 138-142
 22. Amit Das, De-Yi Wang, Klaus-Werner Stöckelhuber, René Jurk, Juliane Fritzsche, Hagen Lorenz, Manfred Klüppel, Gert Heinrich. Rubber-Clay Nanocomposites: Some Recent Facts. *Advances in Polymer Science*. 2010, 1-82, DOI: 10.1007/12.2010.96
 23. Amit Das, Klaus-Werner Stöckelhuber, Sandip Roj, De-Yi Wang, Gert Heinrich. Synergistic effects of expanded nanoclay and carbon black on natural rubber compounds. *KGK*, 2010, 296-302.
 24. Chun-Xia Zhao, Ya Liu, De-Yi Wang, De-Long Wang, Yu-Zhong Wang. Synergistic effect of layered double hydroxide (LDH) on thermal and flame-retardant properties of poly (vinyl alcohol) *Polym. Degrad. Stab.* 2008;93:1323-1331.
 25. Xin-Guo Ge, De-Yi Wang, Chuan Wang, Ming-Hai Qu, Jun-Sheng Wang, Chen-Shou Zhao, Yu-Zhong Wang. A novel phosphorus-containing

- copolyester/montmorillonite nanocomposites with improved flame retardancy. *European Polymer Journal*, 2007, 43(7): 2882-2890.
26. Li-Ping Gao, De-Yi Wang, Yu-Zhong Wang, Jun-Sheng Wang, Bing Yang. A flame-retardant epoxy resin based on a reactive phosphorus-containing monomer of DODPP and its thermal and flame-retardant properties. *Polym. Degrad. Stab.* 2008, 93:1308-1315.
 27. Jun-Sheng Wang, De-Yi Wang, Yun Liu, Xin-Guo Ge, Yu-Zhong Wang. Study on flame retardant epoxy resin with ammonium polyphosphate, cured by polyamide-type cure agent. *Journal of Applied Polymer Science*. 2008, 108(4): 2644-2653.
 28. Yun Liu, De-Yi Wang, Jun-Sheng Wang, Song-Yan peng, Yu-Zhong Wang. A Novel Intumescent flame retardant LDPE system and its thermo-oxidative degradation and flame retardant mechanisms. *Polymer for Advanced Technology*. 2008, 19(11): 1566-1575.
 29. Hua-Qiao Peng, De-Yi Wang, Zhou, Q., Wang, Y. Z. A S- and P-containing flame retardant for PP. *Chinese Journal of Polymer Science*, 2008, 26(3): 1-12.
 30. Yong Tang, De-Yi Wang, Xin-Ke Jing, Xin-Guo Ge, Bing Yang, Yu-Zhong Wang. A formaldehyde-free flame retardant wood particleboard system based on two-component polyurethane adhesive. *Journal of Applied Polymer Science*. 2008.108:1216-1222.
 31. Pei-Bang Dai, De-Yi Wang, Yu-Zhong Wang Thermal Degradation and Combustion Behavior of a modified Intumescent Flame Retardant ABS Composite. *Journal of Thermoplastic Composite Materials* 2009, doi:10.1177/0892705708103404.
 32. Qiang-Lin Li, Xiu-Li Wang, De-Yi Wang, Wei-Cheng Xiong, Guang-Hong Zhong, Yu-Zhong Wang. A Novel Organophosphorus Flame Retardant: Synthesis and Durable Finishing of Poly(ethylene terephthalate)/Cotton Blends. *Journal of Applied Polymer Science*, 2010,3066-3074.
 33. Pei-Bang Dai, Xiu-Li Wang, De-Yi Wang, Li Chen, Yu-Zhong Wang. Effect of Modified Intumescent Flame Retardant via Surfactant/Polyacrylate Latex on Property of Intumescent Flame Retardant ABS Composites, *Journal Macromolecular Science, Physics*. 2008, 47(6): 1087-1095
 34. De-Long Wang, Ya Liu, De-Yi Wang, Chun-Xia Zhao, Yu-Rong Mu, Yu-Zhong Wang. A novel intumescent flame retardant system containing metal chelates for polyvinyl alcohol. *Polym. Degrad. Stab.* 2007,92,1555-1564.
 35. Hong Zhao, Yu-Zhong Wang, De-Yi Wang, Bo Wu, Dan-Qi Chen, Xiu-Li Wang, Ke-Ke Yang. Degradation of flame retardant copolyesters containing phosphorus linked pendent groups. *Polym. Degrad. Stab.* 2003, 80, 135-140.
 36. Xiu-Li Wang, Ke-Ke Yang, Yu-Zhong Wang, De-Yi Wang, Zheng Yang, Crystallization and morphology of a novel biodegradable polymer system: poly (1,4-dioxan-2-one)/starch blends. *Acta Mater.* 2004, 52, 4899-4905.
 37. Den-Qi. Chen, Yu-Zhong Wang, Xiao-Ping Hu, De-Yi Wang, Ming-Hai Qu, Bing Yang. Flame-retardant and anti-dripping effects of a novel char-forming flame

- retardant for the treatment of poly (ethylene terephthalate) fabrics. *Polym. Degrad. Stab.* 2005, 88, 349-356.
38. Wei Liu, Dan-Qi Chen, Yu-Zhong Wang, De-Yi Wang, Ming-Hai Qu. Char-forming mechanism of a novel polymeric flame retardant with char agent. *Polym. Degrad. Stab.* 2007, 92, 1046-1052.
 39. Yun-Hong Jiao□Xiu-Li Wang□Yu-Zhong Wang□De-Yi Wang□Yan-Li Zhai□Jian-Sheng Lin. Thermal Degradation and Combustion Behaviors of Flame-Retardant Polypropylene/Thermoplastic Polyurethane Blends. *J. Macromol. Sci., Phys.* 2009, 48□5□889-909.
 40. Yun Liu, Jun-Sheng Wang, Cheng-Liang Deng, De-Yi Wang, Yan-Peng Song, Yu-Zhong Wang. The synergistic flame-retardant effect of O-MMT on the intumescent flame-retardant PP/CA/APP systems. *Polymer for Advanced Technology.* 2009. DOI: 10.1002/pat.1502.
 41. Zhi Hu, Li Chen, Bin Zhao, Yuan Luo, De-Yi Wang, Yu-Zhong Wang. A novel efficient halogen-free flame retardant system for polycarbonate. *Polym. Degrad. Stab.* doi:10.1016/j.polymdegradstab.2010.03.005
 42. Ming-Hai Qu, Yu-Zhong Wang, Chuan Wang, Xin-Guo Ge, De-Yi Wang, Qian Zhou. A novel method for preparing poly (ethylene terephthalate)/BaSO₄ nanocomposites. *Eur. Polym. J.* 2005, 41, 2569-2374.
 43. Ming-Hai Qu, Yu-Zhong Wang, Ya Liu, Xin-Guo Ge, De-Yi Wang, Chuan wang. Flammability and Thermal Degradation Behaviors of Phosphorus-containing Copolyester/BaSO₄ Nanocomposites *J. Appl. Polym. Sci.* 2006,102, 564-570.
 44. T. Richard Hull, Anna A. Stec, Shonali Nazare, De-Yi Wang, Baljinder K. Kandola and Dennis Price.TGA-FTIR Investigation of the Fire Retardant Mechanism of Acrylonitrile Copolymers Containing Nanofillers. *ACS PrePrint.* 2009.
 45. Xin-Guo Ge, Chuan Wang, Zhi Hu, Xing Xiang, Jun-Sheng Wang, De-Yi Wang, Cong-Ping Liu, Yu-Zhong Wang.Phosphorus-containing telechelic polyester-based ionomer: Facile synthesis and antidripping effects. *Journal of Polymer Science Part A: Polymer Chemistry.* 2008.46(9) 2994-3006.
 46. Jun-Sheng Wang, Yun Liu, Hai-Bo Zhao, Jiang Liu, De-Yi Wang, Yan-Peng Song, Yu-Zhong Wang. Metal compounds-enhanced flame retardancy of intumescent epoxy resins containing ammonium polyphosphate. *Polym. Degrad. Stab.* 2009, 94(4),625-631.
 47. Jun-Sheng Wang, Hai-Bo Zhao, Xin-Guo Ge, Yun Liu, Li Chen, De-Yi Wang, Yu-Zhong Wang, Novel flame-retardant and anti-dripping branched polyesters prepared via phosphorus-containing ionic monomer as end-capping agent, *Industrial & Engineering Chemistry Research*, 2010, 49(9):4190–4196
 48. Bo Li, Feng-Xia Dong, Xiu-Li Wang, Juan Yang, De-Yi Wang, Yu-Zhong Wang, Organically modified rectorite toughened poly(lactic acid): Nanostructures, crystallization and mechanical properties, *European Polymer Journal*, 2009, 45(11):2996-3003.
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Synthesis, characterization and properties of new siloxane grafted copolyimides. *Journal of Applied Polymer Science* (2011).

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Patents

1. De-Yi Wang, Amit Das, Andreas Leuteritz, Udo Wagenknecht, Gert Heinrich. Multitalented Layered Double Hydroxide in Rubber Curing and multifunction and Methods of Preparing Same. German Patent. DE 10 2009 052 275.1
2. De-Yi Wang, Sheng-Jun Wang, Xin-Guo Ge, Yu-Zhong Wang. A novel method for preparing PET nanocomposite. Chinese Patent (No: 200710048658.X)
3. De-Yi Wang, Yan-Peng Song, Xiu-Li Wang, Xiao-Ya Yuan, Yu-Zhong Wang. The preparation halogen-free PLA containing phosphorus and its blends. Chinese Patent (No□200810147907.5)
4. De-Yi Wang, Xiu-Li Wang, Yan-Peng Song, Ling Lin, Lian-Lian Wei, Li Chen, Yun Liu, Yu-Zhong Wang. A toughening flame retardant PLA composite and its blends. Chinese Patent (No□201010047809.7)
5. Yu-Zhong Wang, De-Yi Wang. Phosphorus-containing spirocyclic flame retardants and their preparing methods. Chinese Patent (No. ZL 2005 1 0021217.1)
6. Yu-Zhong Wang, Cheng-Shou Zhao, De-Yi Wang. Phosphorus-containing random liquid crystalline copolyesters and their preparing method. Chinese Patent (No: 200510021855.3)
7. Yu-Zhong Wang, Zhi Hu, Li Chen, De-Yi Wang, Jun-Sheng Wang. A method for preparing organic polysiloxane with multi-functional group. Chinese Patent (No: 200910167821.3)
8. Yu-Zhong Wang, Ming-Hai Qu, De-Yi Wang. A phosphorus-containing copolyester/ Barium sulfate nanocomposite and its preparing methods. Chinese Patent (No: 200510021959.4)
9. Ya Liu, Chun-Xia Zhao, De-Yi Wang, Jian-Sheng Lin, Yu-Zhong Wang. Fire retarded PVA and its preparation. Chinese Patent (No. 200810045182.9)
10. Yu-Zhong Wang, De-Long Wang, Chun-Xia Zhao, Ya Liu, De-Yi Wang. A novel flame retardant and flame retarded PVA containing P, N and its preparing method. Chinese Patent (No: 200710048658.X)
11. Yu-Zhong Wang, Xin-Guo Ge, Chuan Wang, Xing Xiang, Xin-Ke Jing, De-Yi Wang, Zhe Sun. Fire retarded copolyester ionomer containing phosphorus and its preparation. Chinese Patent (CN101225158)
12. Yu-Zhong Wang, Bo Wu, Deng-Xuan Peng, Li Guo, Xiao-Hua Du, De-Yi Wang. Preparation of containing phosphorus poly (ethylene terephthalate)/ clay layered nanocomposite. Chinese Patent (No. CN 1396206A)

13. Yu-Zhong Wang, Xin-Guo Ge, Chuan Wang, Xing Xiang, Xin-Ke Jing, De-Yi Wang, Zhe Shun. Preparation of a fire retarded ionomer containing phosphorus. Chinese Patent (No. CN 101225158)
14. Yu-Zhong Wang, Yun Liu, Cheng-Liang Deng, De-Yi Wang, Yan-Peng Song, Shuang Xia, Jing Zhao. Halogen-free intumescent fire retardant polyolefin composite. Chinese Patent (No: 200910058624.8)
15. Yu-Zhong Wang, Jun-Feng Han, Yun Liu, Guo-Ming Zhao, De-Yi Wang, Li Chen, Jun-Sheng Wang, Xiu-Li Wang. Preparation of branching and cross linking structure intumescent flame retardant char agent with high molecular weight and its application. Chinese Patent (No: 200910164250.8)
16. Hong-Bing Chen, Yu-Zhong Wang, Yi Zhang, Li Chen, Xiu-Li Wang, DeYi Wang. A method for preparing flame retardant PTT nanocomposite with halogen-free. Chinese Patent (No: 200910216319.7)