



College of Polymer Science and
Polymer Engineering
The University of Akron, OH
330-972-6931

scheng@uakron.edu

gozips.uakron.edu/~scheng/index.html

Biography: Stephen Cheng received his Ph.D. degree at Rensselaer Polytechnic Institute. Although he has become dean of the College of Polymer Science and Polymer Engineering since 2007, he has been continuously active in his researches. He has also been appointed to be a number of honorary, visiting and guest professors in China, Japan, France and Belgium and the US. He has been a major professor of 32 M.S. and 78 Ph.D. students. He has given more than 600 invited lectures at universities, industrial research and development centers, national laboratories and professional conferences in the United States and abroad.

Awards/Accomplishments:

- Member, National Academy of Engineering (2008)
- Presidential Young Investigator Award (1991); John H. Dillon Medal of APS (1995); Mettler-Toledo Award of NATAS (1999); The Cheung-Kong Scholar, Ministry of Education, China (2000); TA Award of IACTAC (2004); ACS PMSE Cooperative Research Award (2005); Polymer Physics Prize of APS (2013)
- Fellows: AAAS, APS, CCS, NATAS, and National Academy of Inventors (2012)

Research Interests:

Cheng's research interests center on the condensed states in polymers, liquid crystals, surfactants and micelles, hybrid nano-materials, and focuses on the interactions, responses, dynamics, and structures of materials on varying length and time scales in which the material itself embodies the technology. His research activities include investigations of transition thermodynamics and kinetics in metastable states, ordered structures and morphologies, surface and interface structures in electronic and optical materials and advanced functional materials.

Industrial Sector Focus:

Polyolefin technology

Hybrid nano-science and technology at various length scales

Optical film technologies

Unique Laboratory Facilities:

Crystal and ordered phase structure determinations and morphologies via X-ray, electron diffraction and transmission electron microscopic techniques.

Structure-property relationships of polymer in fibers, films, and bulks utilizing mechanical, electrical and optical measurements.

Recent Patents/Publications:

1. Negative birefringent rigid rod polymer films for liquid crystal displays, US Pat. 5,580,950 (**1996**)
2. Waveplate and optical circuit formed from mesogen- containing polymer, US Pat. 6,870,978 (2005), 7,058,249 (**2006**)
3. Polyimides used as microelectronic coatings, US Pat. 7,074,493 (**2006**)
4. Poly(aryletherimides) for negative birefringent films for LCDs, US Pat. 7,820,253 (**2010**)
5. Photonic crystals, conjugated polymers suitable for photonic crystals, and a method for synthesizing conjugated polymers, US Pat. 8,257,493 (**2012**)
6. Stephen Z. D. Cheng; Phase transitions in polymers: The role of metastable states, pp. 324, Elsevier: Amsterdam (**2008**)

He has published over **460** papers and issued **11** US patents and worldwide equivalents.