BRITISH COUNCIL

RESEARCHER LINKS

Newton Fund

Research Profile

Name: Zhiyong Jiang
Position: Associate Professor
Institute/division: State Key Laboratory of Polymer Physics and Chemistry, Changchun Institute of Applied Chemistry, Chinese Academy of Sciences
Email: jiangzhy@ciac.ac.cn
Tel: (00)86 431 85262961

SUMMARY OF MY RELEVANT RESEARCH AREAS:

Brief summary of your research areas, in English *just a short paragraph please*

Processing-microstructure-property relationships in crystalline polymers; in situ polymer structuring process under flow-induced crystallization and deformation using small angle X-ray scattering

Brief summary of your research areas, in Chinese *we will translate this for non-Chinese speaking UK participants*

结晶高分子材料的加工-微观结构-性能之间的关系；高分子结晶和形变行为的小角 X 射线散射原位研究。

Primary Research interests: *A fuller description of your main research areas.*

We mainly focus on the in situ structural evolution of semicrystalline polymers, such as polyolefin and biodegradable polymers, under various imposed fields by means of synchrotron small-angle X-ray scattering (SAXS) technique, and correlate the structural and morphological information at the molecular and nanometric length scales to the macroscopic properties.

The other research interest is polymer crystallization, including crystallization mechanism and the laws on how the crystallization conditions affect the polymer microstructure and morphology, and thus the mechanical properties of the final product.

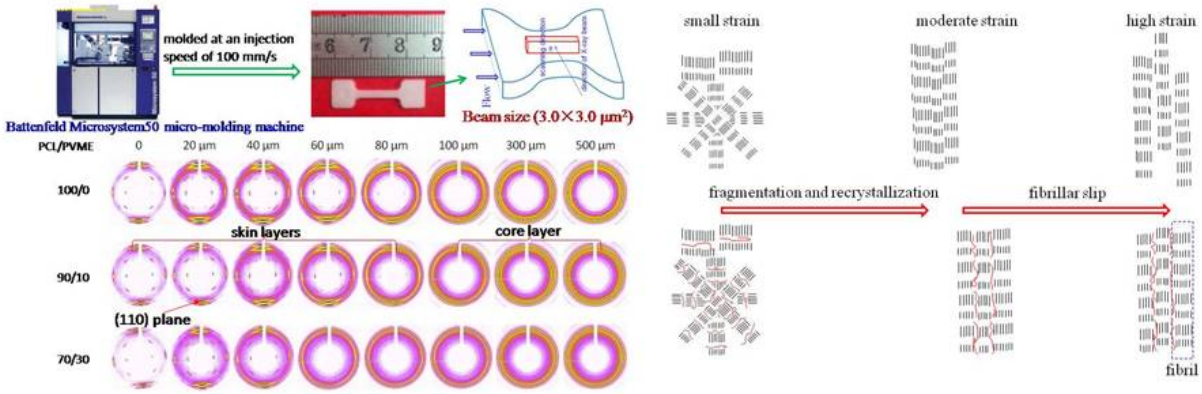
Topics in which you would like to develop collaborative research:

Please indicate here research areas for which you would like to find partners to undertake joint research.

Polymer processing including micromolding, injection moulding, ultrasonic moulding and die drawing, and multi-scale computer modelling of polymer structuring process.

Relevant existing collaborations (academic/clinical/commercial) inside or outside China.
Include here any relevant collaborations you have
China: Daqing Petrochemical Research Institute, PetroChina Co. Ltd.
UK: Research Exchanges with China and India project supported by the Royal Academy of Engineering with University of Bradford.

Relevant graphics, figures, pictures:
Use this area to show pictures or scientific figures which illustrate your research



Structure distributions of micromolded poly(ε-caprolactone) and its miscible blends with poly(vinyl methyl ether) together with the schematic representation of their structural evolution upon tensile stretching.

Publications and other outputs relevant to your interest in this programme (up to 5)
Please give references to your key recent research publications

1. Lu Y; Wang YT; Chen R; Zhao JY; Jiang ZY; Men YF, 'Cavitation in Isotactic Polypropylene at Large Strains during Tensile Deformation at Elevated Temperatures', *Macromolecules* 2015, *48(16)*, 5799-5806.
2. Wang YT; Lu Y; Zhao JY; Jiang ZY; Men YF, 'Direct Formation of Different Crystalline Forms in Butene-1/Ethylene Copolymer via Manipulating Melt Temperature', *Macromolecules* 2014, *47(24)*, 8653-8662.
3. Wang YT; Jiang ZY; Fu LL; Lu Y; Men YF, 'Lamellar Thickness and Stretching Temperature Dependency of Cavitation in Semicrystalline Polymers', *PLOS ONE* 2014, *9(5)*, e97234.
4. Jiang ZY; Wang YT; Fu LL; Whiteside B; Wyborn J; Norris K; Wu ZH; Coates P; Men YF, 'Tensile Deformation of Oriented Poly(ε-caprolactone) and Its Miscible Blends with Poly(vinyl methyl ether)', *Macromolecules* 2013, *46(17)*, 6981-6990.
5. Jiang ZY; Fu LL; Sun YY; Li XH; Men YF, 'Deformation-Induced Phase Separation in Blends of Poly(ε-caprolactone) with Poly(vinyl methyl ether)', *Macromolecules* 2011, *44(17)*, 7062-7065.