

Research Profile

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SUMMARY OF MY RELEVANT RESEARCH AREAS:

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

Polymer processing engineering; rheological measurements in polymer processing; Polymeric nano-composites, aiming to novel technology for nano-additives dispersion and distribution as well as the interfacial modification.

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

聚合物加工工程；流变测试与分析/聚合物加工流变学；聚合物纳米复合材料混合新技术，面向纳米颗粒在粘弹性聚合物熔体中的分散、分布混合以及表面改性技术。

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

Polymer processing. Develop Novel technology to induce predicted structure by processing.

Rheological measurement. To explore the interfacial morphology between nano-inclusions and matrix through rheological response, aiming to moderate the inner structure of nano-composites.

Functional nano-composites. Healthcare and medical materials, electrical/heat conductive composites, dielectrics and biomaterials, which can be processed by micro moulding, precise extrusion and other methods under a certain pressure and temperature.

Uniaxial/ biaxial extension of function sheets/films/membranes. Develop apparatus and advanced process technologies.

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.

Potential application of die-drawing technology for high speed road protection devices.

Extensional flow behaviour for dis-aggregation of the nano-particles, requiring a good dispersion state.

Biaxial drawn device development for experimental requirements.

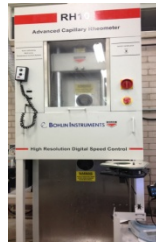
Relevant existing collaborations (academic/clinical/commercial) inside or outside China.

Include here any relevant collaborations you have

Include: University of Bradford, Sichuan University and Institute of Applied Chemistry CAS Changchun

Relevant graphics, figures, pictures:

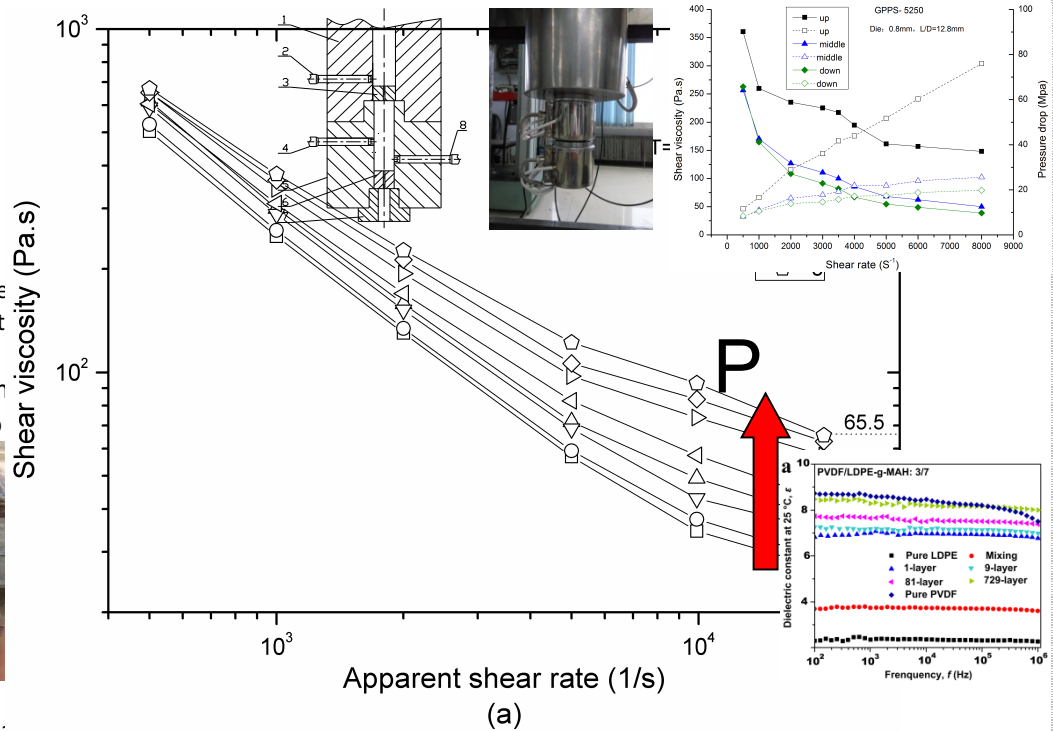
Use this area to show pictures or scientific figures which illustrate your research

1. Pressure effect on viscosity of polymer melts in capillary flow. Rheometer design & manufacture.

Geometrical design
Pressure sensitive

2. Structuring aiming to

Biaxial



Layer multiplication and the solid phase orientation technologies were adopted as two effective strategies to optimize the dispersion state and the orientation of internal microstructure.

Publications and other outputs relevant to your interest in this programme (up to 5)

Please give references to your key recent research publications

- ✧ **Xiang Lin** et al. Shear-induced Crystallization Morphology and Mechanical Property of High Density Polyethylene in Micro-injection molding. *Journal of Polymer Research*, 2013, 20(4): 1-12
- ✧ **Xiang Lin** et al. Capillary Study on Geometrical Dependence of Shear Viscosity of Polymer melts. *Journal of Applied Polymer Science*, 131(6): 596-602
- ✧ **Xiang Lin** et al. Effect of the compatibility on dielectric performance and breakdown strength of poly(vinylidene fluoride)/low density polyethylene blends. *Journal of Applied Polymer Science*, 2015, 132, 42507
- ✧ **Xiang Lin** et al. Improved dielectric performance of polypropylene/multi-walled carbon nanotubes nanocomposites by solid phase orientation. *Journal of Applied Polymer Science*, 2016, 133(3): DOI: 10.1002/app.42893
- ✧ **Xiang Lin** et al. Enhanced dielectric properties of immiscible poly (vinylidene fluoride)/low density polyethylene blends by inducing multilayered and orientated structures. *Composites B*. Under revision.