Dr. Anesh Manjaly Poulose (PhD)

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The Scientific interests are focused on the following topics

·         Polymer blends and composites.

·         Polymer crystallization under processing conditions.

·         Post processing behavior of semi-crystalline polymers.

·         Synthesis of (m, n) Poly (amides) and morphology and structure development.

**Projects undertaken in the past years:**

·         Plasticizers on semi-crystalline polyester [PBT/PET] blend solidification under processing conditions.

Polymer solidification is a complex phenomenon especially under drastic polymer processing conditions. In this project a model experimental has been set up to mimic the relevant processing variables (cooling rate and pressure). The crystallization kinetics of PBT/PET blends and influence of different miscible plasticizers on the rate of crystallization has been studied to get more insights on the complex crystallization process.

Anesh Manjaly Poulose, Stefano Piccarolo, D. Carbone, S. M. Al-Zahrani. Influence of plasticizers and cryogenic grinding on the high cooling rate solidification behavior of PBT/PET blends. *Journal of Applied Polymer Science*, 133,2016, 43083.

Piccarolo, S., Anesh M Poulose and Luzio, A. Influence of plasticizers suggests role of topology in polymer solidification at high cooling rates. *Journal of Applied Polymer Science* 125, 2012, 4233.

Stefano Piccarolo, Anesh Manjaly Poulose, Two timescales in polymer solidification: processing Vs. polymer crystallization, *AIP Conf. Proc*., 1255, 2010, 209.

·         Mapping mechanical Properties by Nano-indentation and Atomic force microscopy.

The surface detection of the characterized sample by the nano-indentor tip is crucial in calculating the mechanical properties. In complaint polymer samples, the wrong surface detection always leads to the poor reliability of the results.  Different methods have been developed to detect the actual surface of the complaint material and to get more reasonable data.

Stefano Piccarolo, Antonio Falsone, Anesh Manjaly Poulose, Improving surface detection on  nano-indentation of compliant materials, *Measurement Science and Technology*, 21, 2010, 065701.

·         Synthesis of (m, n) nylons and morphology and structure development.

Different series of (m, n) nylons were synthesized by interfacial polymerization technique. The crystalline brill transitions on heating were monitored by high temperature X-ray diffraction and High temperature Fourier Transform infrared spectroscopy.

Anesh M. Poulose, C. Ramesh, Govind Patakamuri, Crystalline transition studies in nylon (4, n) n=6, 8, 10, 12 by high temperature X-ray diffraction and Fourier transform infrared spectroscopy. (Manuscript under progress).

·         Short term work of DSM Netherlands (3 months) on three different nylons; deals with the relationship between the processing conditions and the morphology developed.

·         Short term research work (3 months) at Halle University Germany on thermal analysis of Polyester blends.

·         Short term project at Kancor Flavours and Extracts LTD Kerala, INDIA, regarding the Comparative study of Nutmegs and chemical constituents.

·         Partly participated in Carbon fiber reinforced Poly (propylene) and Poly (ethylene) Composites.

Hamid Shaikh, Anesh M Poulose, Syed Gulrez, Arfat Anis, S.M Al-Zahrani, Recent Progress in Carbon fiber reinforced Poly (propylene) and Poly (ethylene) composites: A review *Polymer-Plastics Technology and Engineering*, 53, 2014, 1845.

·         Partly participated in Conductivity improvement project in Poly (propylene) and Poly (ethylene) Composites and Auto glowing polymer composites.

Mukesh K. Yadav, Eng. Hau P. Qua, S. M. Al-Zahrani, A Review on Electrically Conductive Polypropylene and Polyethylene. *Polymer Composites*, 35, 2013, 900.

Anesh Manjaly Poulose, Arfat Anis, Hamid Shaikh, Justin George, Saeed Al-Zahrani, Effect of plasticizer on the electrical, thermal and morphological properties of Carbon black filled Poly (propylene), *Polymer Composites*,2015.

M. P. Anesh, Syed K. H. Gulrez, A. Anis, H. Shaikh, M. E. Ali Mohsin, S. M. Al-Zahrani, Developments in Eu+2 doped Strontium Aluminate and Polymer/Strontium aluminate composite.*Advances in polymer technology*, 33, 2014, 21436.

Arfat Anis, Shan Faiz, Mohammad Luqman, Anesh Manjaly Poulose, Syed K. H. Gulrez, Hamid Shaikh, and Saeed M. Al-Zahrani, Developments in Shape Memory Polymeric Materials.

*Polymer-Plastics Technology and Engineering*, 52, 2013, 1574.

Studies on High Density Polyethylene reinforced with Phosphate ore particles: Thermal, Rheological, Mechanical and Morphological Properties

H. Shaikh, A. Anis, A.M. Poulose, M. Alam, M.N. A-Otaibi, M.A. Alam, S.M. Al-Zahrani

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**Education:**

PhD in Chemical Engineering of Materials from Palermo University Italy (2011)

Masters in Polymer technology (M. Tech) from Cochin University of Science and Technology (CUSAT), India (2006)

Masters in Science (M. Sc Chemistry) from Calicut University, India (2003)

**My work presented in the following conferences**:

S. Piccarolo, A. M Poulose, High cooling rates solidification introduces skepticism on the role of nucleating agents on Polymer Crystallization under Conditions Relevant to Processing. *Workshop on Polymer Crystallization*, Genova, Italy, May 27-28, 2010.

S. Piccarolo, A. M Poulose, An attempt to draw insights on polymer crystallization from solidification under extreme conditions. *4ICPB*;*IUPAC*, Lodz, Poland, Sept 27-30, 2010.

S. Piccarolo, A. M Poulose, Two timescales in polymer solidification: processing Vs. polymer crystallization. *Times of Polymers and Composites*, Ischia Italy, June, 2010.

**DECLARATION**

I, Anesh Manjaly Poulose hereby declare that the information’s given above are true to the best of my knowledge and any error regarding this can lead to my disqualification.

ANESH MANJALY POULOSE

**REFERENCES:**

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