

## **Francesco Briatico Vangosa**

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He graduated in 1998 in Chemical Engineering with a thesis on mechanical behavior of semicrystalline polymers at high strain rate and high temperature carried out under the supervision of Prof. Marta Rink, Politecnico di Milano and in cooperation with Montell S.p.A. The experimental methods developed in the thesis have been adopted by Montell as an internal standard to investigate the processability of polyolefins by blow molding and thermoforming.

He attended the XIII edition of PhD Course in Materials Engineering and defended his thesis on the effects of pressure and carbon dioxide pressure on the volumetric state in amorphous polymers in 2001. During his PhD he SPENT A YEAR visiting Texas Tech University (Lubbock, TX, USA) and cooperated with Prof. Gregory McKenna and his aids on a research on the effect of CO<sub>2</sub> and other molecules as plasticizers in polymers.

Since 2003 works as assistant Professor at the Chemistry, Chemical Engineering and Materials Department of Politecnico di Milano.

He is responsible for the “Polymeric Materials” and “Fundamentals of polymer processing” classes for Materials Engineering Degree, and advisor of MSc and PhD theses.

HE ADVISES the steering committee for the Bachelor and Master course in “Materials Engineering and Nanotechnology” at Politecnico di Milano. and the steering committee of the PhD Course in “Materials Engineering” at Politecnico di Milano and actively participates in both.

His research is focused on the study of physical and mechanical behavior of polymers and on polymer processing.

1) Mechanics of polymeric materials: experimental characterization of semicrystalline polymers mechanical behavior at high temperature and strain rate and investigation of the constitutive equations for its description; mechanical failure of bulk polymers and coating under quasi static and cyclic loads; development of methods for the investigation of the viscoelastic behavior of glassy polymers;

2) Dilatometry of polymeric materials: study of the volumetric behavior of glassy and semicrystalline polymers; study of the effects of pressure on glass transition; study of volume viscoelasticity and its correlation with aging phenomena in polymers; study of the effects of dilatometric behavior on the oscillating flow instability of polymer melts extruded through a die.

3) Polymer processing: analysis and simulation of co-injection molding. Correlation between rheologic behavior and spinnability of polymeric solutions. Flow instabilities at capillary exit and its correlation with melt dilatometric behavior.

F. Briatico Vangosa is author of several peer-reviewed publications on international journals or international conferences and contributions to non peer-reviewed international and national conferences.