	Experiment title:	Experiment number:
	Flow induced precursors of crystallization: effects on rheology and morphology	26-02-455
Beamline: BM26B	**Date(s) of experiment**: from 21/10/2008 at 8:00 to 27/10/2008 at 8:00	**Date of report**: *23/01/2009*
Shifts: 18	**Local contact(s)**: Dr. Lucia FERNANDEZ	

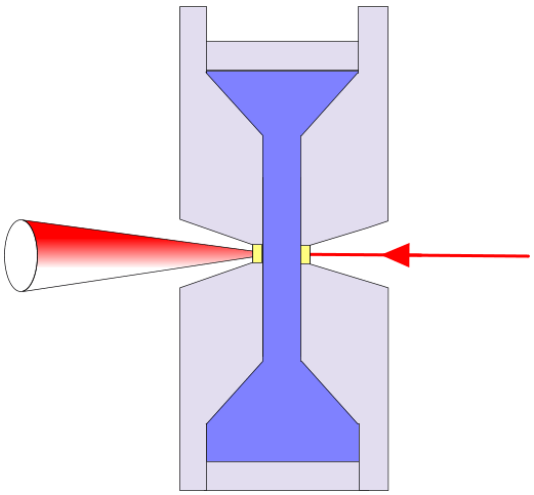
Names and affiliations of applicants:

Dr.ir Gerrit W.M. PETERS, Prof.dr. Sanjay Rastogi, Dr. Luigi BALZANO, Dr Jan-Willem HOUSMANS, Dr. Lucia FERNANDEZ-BALLESTER

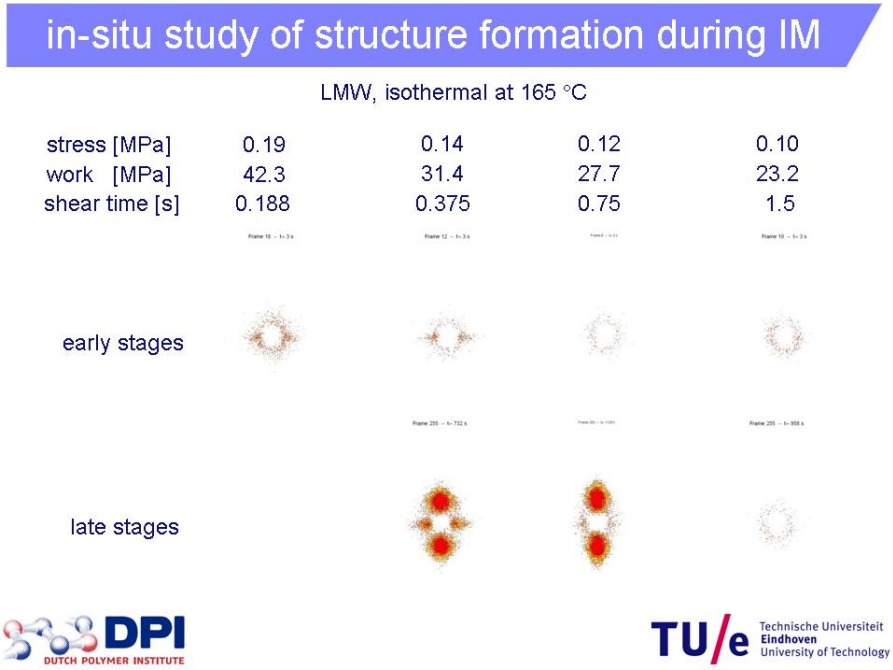
Technische Universiteit Eindhoven, P.O.Box 513, 5600 MB Eindhoven, the Netherlands.

Report: (max. 2 pages)

The Multi Pass Rheometer (MPR) was, for the first time, installed (see figure below) and successfully used on a beamline. With this machine, we can reproduce typical injection moulding (IM) conditions in a well controlled fashion.



The experiments performed concern the study of the early stages in the flow induced crystallization of polymers, mainly isotactic polypropylene, iPP. The results obtained during this experiment highlight the formation of an highly oriented ‘shear layer’ when the applied stress overcomes a certain threshold that depends on the material, on its molecular weight and on the experimental temperature.



More data analysis is being performed and the results will be used as a reference to evaluate numerical models developed in our group at the Technische Universiteit Eindhoven.