

Encontro da X SBPMat

Gramado-RS

25 to 29 | september
2011

Conference Details and Registration

All attendees are encouraged to visit the conference website <http://www.sbpmat.org.br/x-meeting> for further and updated information such as registration, submission of abstracts, important links for traveling (visas, travel agencies) and hotel reservation.

Symposia

- A) Magnetic and Superconducting Materials
- B) Biodegradable Polymer Materials
- C) Electronic Materials
- D) Surface Engineering: Fabrication, Characterization, Properties and Applications of Protective Coatings and Modified Surfaces
- E) Materials with Negative Properties
- F) Nanostructured Functional Materials for Advanced Energy and Environmental Applications
- 3) Molecular Modeling Materials Science
- 1) Structure-property Relationship of Advanced Metallic Materials
- 2) Sol-gel Route to Prepare New Inorganic, Hybrid and Multifunctional Materials
- 4) Solidification of Metals and Alloys
- 5) Supramolecular Organic Materials for Electronic, Photonics and Nanotechnology
- 6) Structure-Property Relationship of Ceramic Materials: Theoretical and Experimental Aspects
- 7) Advances and Applications of Electron Microscopy
- 8) Prospects for Materials Science with Synchrotron Radiation in Brazil
- 9) 1st Brazilian Symposium in Friction Stir Welding and Processing
- 10) Graphene

Official Travel Agency: Liga Turismo

Our agency provides excellent hosting, airline tickets (20% discount), Gramado-PoA airport shuttle options and sightseeing suggestions.

Liga Turismo also provides travel-hosting-tour combo options! Get in touch!

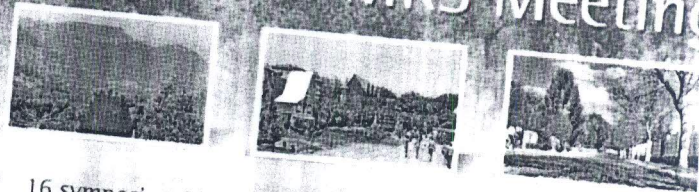
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Brazilian Materials
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X Brazilian MRS Meeting



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*10 years of excellence in
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Contact

Secretariat
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Conference Chairs

Paulo F. P. Fichtner - UFRGS - RS
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Important Dates

April, 5th - Registrations open
May, 30th - Submissions deadline
June, 13th - Acceptance

Support



Credit of photos: Leonid Strelan

Studies of polymer micro and nanofibers obtained by Solution Blow Spinning

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Polymer nanofibers have attracted attention of the scientific community due to some important features such as their high surface area that make these materials possible candidates to many applications ranging from sensors, catalysis and filters to bioscaffolds and smart fabrics[1,2]. Current methods of fiber spinning produce mainly microfibers and the only method available to produce nanofibers (electrospinning) suffers from limitations such as the use of high voltages and low production rates. Recently, a new technique called Solution Blow Spinning (SBS) that uses a stream of pressurized gas was successfully used to produce polymer nanofibers with diameters down to 40 nm for polymers such as poly(lactic acid) [1]. In this work, we studied the possibility of controlling fiber morphology as a function of process variables such as air pressure, polymer type and concentration, and injection rate of polymer solution. Polycaprolactone (PCL), poly(vinyl chloride) (PVC) and poly(lactic acid) (PLA) micro and nanofibers were spun from solutions using an SBS apparatus at different working conditions. Depending on these conditions (pressure, injection rate, etc.), polymer micro and nanofibers with diameters ranging from few tens of nanometers to several micrometers (Figure 1) were obtained. The choice of the right process variables (polymer concentration, injection rate and air pressure) is of key importance to controlling fiber morphology and size.

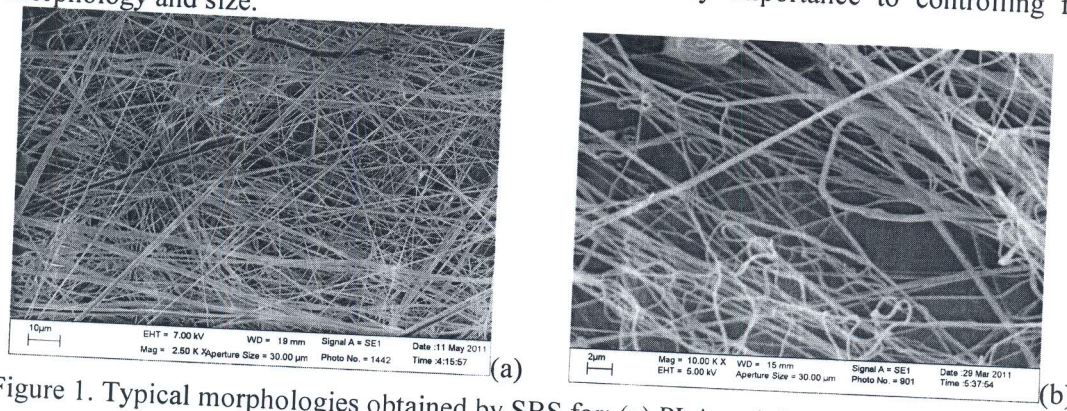


Figure 1. Typical morphologies obtained by SBS for: (a) PLA and (b) PCL spun fibers.

Keywords: polymer fibers, solution blow spinning, polycaprolactone, poly(lactic acid), poly(vinyl chloride)

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- [1] E. S. Medeiros, G. M. Glenn, A. P. Klamczynski, K. O. William, L. H. C. Mattoso, J. Appl. Poly. Sci. 113, 2322 (2009).
 - [2] J. E. Oliveira et al., Nano and Submicrometric Fibers of PDLA by Solution Blow Spinning: Process and Solution Variables, J. Appl. Poly. Sci., (2011). In press.
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