

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
- G) Molecular Modeling Materials Science
- H) Structure-property Relationship of Advanced Metallic Materials
- I) Sol-gel Route to Prepare New Inorganic, Hybrid and Multifunctional Materials
- J) Solidification of Metals and Alloys
- K) Supramolecular Organic Materials for Electronic, Photonics and Nanotechnology
- L) Structure-Property Relationship of Ceramic Materials: Theoretical and Experimental Aspects
- M) Advances and Applications of Electron Microscopy
- N) Prospects for Materials Science with Synchrotron Radiation in Brazil
- O) 1st Brazilian Symposium in Friction Stir Welding and Processing
- P) Graphene

Official Travel Agency: Liga Turismo

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

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16 symposia with oral, poster and invited lecture presentations

Plenary lectures
Exhibits

Celebration of 10 years of Brazilian MRS

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*10 years of excellence in
the congregation of science
and research in materials
technology in Brazil*

Contact

Secretariat
x-meeting@sbpmat.org.br
(55) (51) 3231-0311

Conference Chairs

Paulo F. P. Fichtner - UFRGS - RS
Naira M. Balzaretto - UFRGS - RS

Important Dates

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

Support



A Nanocarrrier Charge Model for the Transport in Poly(*o*-alkoxyanilines)

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The mechanisms for charge transport and the nature of the charge species have been controversial. Here we propose a structural model for poly(*o*-alkoxyanilines), where the conduction process is governed by nanocarriers or *quasi*-particles with concomitant hopping and tunneling between conducting islands. The metallic islands are coupled into the network with the twisted and tangled polymer chains. We studied the formation of *charge carriers* in poly(*o*-alkoxyanilines) using electron paramagnetic resonance (EPR), which shows the presence of two types of *charge carriers* in poly(*o*-alkoxyaniline) solutions for an intermediate pH value (pH=5.0). The first type is localized in the amorphous part and with small mobility, while the second is delocalized in the semi-crystalline part with high mobility. Using small-angle X-ray scattering (SAXS) we confirm the existence of *quasi*-particles in solution, corroborated by *ab initio* procedures based on simulated annealing. The model also indicates that the *quasi*-particles may jump between defects along the polymer chain providing electronic conduction, which are consistent with molecular modeling results (*ab initio* and semi-empirical). However, it does not discard the hopping process between neighboring chains.

Keywords: Nanocarriers, AFM, Polyaniline, EPR, XPS and SAXS.

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