

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

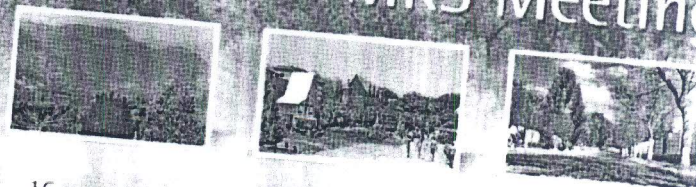
1st Brazilian Symposium in Friction Stir Welding and Processing Graphene

Official Travel Agency: Liga Turismo

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!

Phone: +55 51 3085-4466 or +55 54 3286-4048
Email: reservas@ligaturismo.com.br



16 symposia with oral, poster and invited lecture presentations

Plenary lectures

Exhibits

Celebration of 10 years of Brazilian MRS

National Committee

Aldo Felix Craievich (USP-SP)
Aloisio Nelmo Klein (UFSC)
Antonio Carlos Hemandes (USP-SC)
Carlos Frederico de Oliveira Graeff (Unesp)
Carlos Maurício Lepienski (UFPR)
Dulce Maria de Araujo Melo (UFRN)
Edgar Dutra Zanon (UFSCar)
Elisa Maria Baggio Saitovitch (CBPF)
Elson Longo (Unesp)
Fernando Cláudio Zawislak (UFRGS)
Fernando Lazaro Freire Junior (PUC-RJ)
Iêda Maria Garcia dos Santos (UFPB)
Ivan Guillermo Solorzano (PUC-RJ)
Jesiel Freitas Carvalho (UFG)
José Alberto Giacometti (Unesp)
José Antônio Eiras (UFSCar)
José Arana Varela (Unesp)
Julio Ricardo Sambrano (Unesp)
Margareth Spangler (CETEC-MG)
Raul José da Silva C. M. da Fonseca (UERJ)
Renato de Figueiredo Jardim (USP-SP)
Roberto Mendonça Faria (USP-SC)
Sergio de Souza Camargo Junior (UFRJ)
Waldemar Augusto A. Macedo (CDTN)
Walter Jose Botta Filho (UFSCar)

Local Committee

Adriana Pohmann (UFRGS)
César Petzhold (UFRGS)
Cristiano Krug (UFRGS)
Daniel L. Baptista (UFRGS)
Eduardo Ceretta Moreira (Unipampa)
Fábio Teixeira Dias (UFPEL)
Gustavo M. de Azevedo (UFRGS)
Luiz F. Schelp (UFSM)
Márcia R. Gallas (UFRGS)
Naira M. Balzaretto (UFRGS)
Paulo F. P. Fichtner (UFRGS)
Ricardo M. Papaleo (PUC-RS)

*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



Investigation of graphene nanosheets stable suspensions and graphene films obtained by spin coating technique

V. F. Soares¹, P. S. P. Herrmann¹, A. Manzolli¹, M. Simões¹

¹ National Nanotechnology Laboratory for Agribusiness - Embrapa Instrumentação, São Carlos, SP, Brazil

Graphene has been deeply studied recently due to its wide applicability in materials science, specially in thin conducting films for sensors [1-3]. Several methods can be used in order to obtain graphene sheets, such as: CVD and epitaxial growth, mechanical exfoliation, colloidal route, etc [1]. In this study graphene oxide was obtained through Hummers method [4]. The material was then sonicated for exfoliation and then reduced using two reducing agents, catechol and hydrazine. Thin films were obtained by spin coating two substrates: glass and PET. The obtained materials were characterized by FTIR, NMR, UVVIS, AFM, SEM, contact angle analysis (Figure 1), and zeta potential. The dispersability of graphene sheets increased in the presence of PSS surfactant and in basic pH. The films characteristics are strongly dependent on the dispersion degree of the suspension, which makes necessary an optimization of suspensions properties in order to obtain homogeneous films. The graphene films obtained by spin coating open a new possibility to applications.

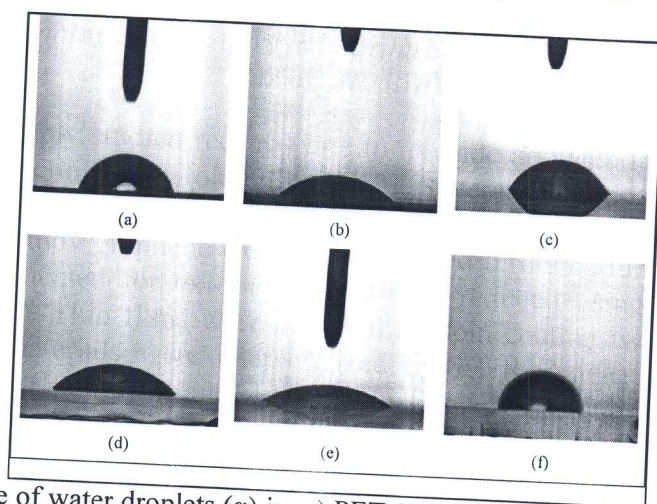


Figure 1: Contact angle of water droplets (α) in: a) PET ($\alpha = 72^\circ$); b) PET + graphite oxide film ($\alpha = 40^\circ$); c) PET+graphene film ($\alpha = 63^\circ$); d) glass ($\alpha=53^\circ$); e) glass + graphite oxide film ($\alpha = 28^\circ$); f) glass + graphene film ($\alpha = 68^\circ$).

Work supported by Empresa Brasileira de Pesquisa Agropecuária.

- [1] S. Park; S. R. Ruoff, *Nature Nanotechnology*. **4**, 217 (2009).
- [2] S. Park, J. An, R. D. Piner, I. Jung, D. Yang, A. Velamakanni, S. T. Nguyen, R. S. Ruoff, *Chem. Mater.* **20**, 6592 (2008).
- [3] S. Stankovich, D. A. Dikin, R. D. Piner, K. A. Kohlhaas, A. Kleinhammes, Y. Jia, Y. Wu, S. T. Nguyen, R. S. Ruoff, *Carbon*. **45**, 1558 (2007).
- [4] W. S. Hummers, R. E. Offeman, *J. Am. Chem. Soc.* **80**, 1339 (1958).

herrmann@cnpdia.embrapa.br

Rua XV de Novembro, 1452 São Carlos/SP CEP13560970.