

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

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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
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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



Credit of photos: Leonid Strelan

Synthesis of TiO₂/WO₃ heterostructures by the oxidant peroxide method (OPM)

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Coupling TiO₂ with WO₃ has been the subject of intensive investigations during the last 15 years as an approach that for achieving an efficient charge separation and improving the photocatalytic properties of TiO₂¹. TiO₂/WO₃ nanoheterostructures were prepared by oxidant-peroxo method (OPM) synthesis under hydrothermal conditions. This method consists in dissolution of metal precursor (Ti or W) in H₂O₂ solution and posterior hydrothermal treatment, yielding in the corresponding oxide. After that, these oxides are mixed in water in a proportion of 9:1 (TiO₂:WO₃) and treated again in hydrothermal conditions, in order to obtain the nanoheterostructures. This method can be used to produce a model system to study the influence of WO₃ on TiO₂ photocatalysis, since there aren't contaminants such organic or mineral compounds. The XRD analysis of the synthesized samples showed reflections related to crystallographic planes attributed to TiO₂-anatase, the most photoactive phase of titania and WO₃ phase. SEM analysis showed that was obtained particles in nanometric scale. The samples will be tested as photocatalyst to Rhodamine B degradation under UVC radiation².

Keywords: TiO₂; WO₃; Heterostructures.

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[1] L. Kezhen, J. Li, X. Qing, W. Li, Q. Chen, *Journal of Hazardous Materials*, **189**, 329 (2011).

[2] V. R. Mendonça, C. Ribeiro, *Appl. Catal. B: Environ.*, **105**, 298 (2011).

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