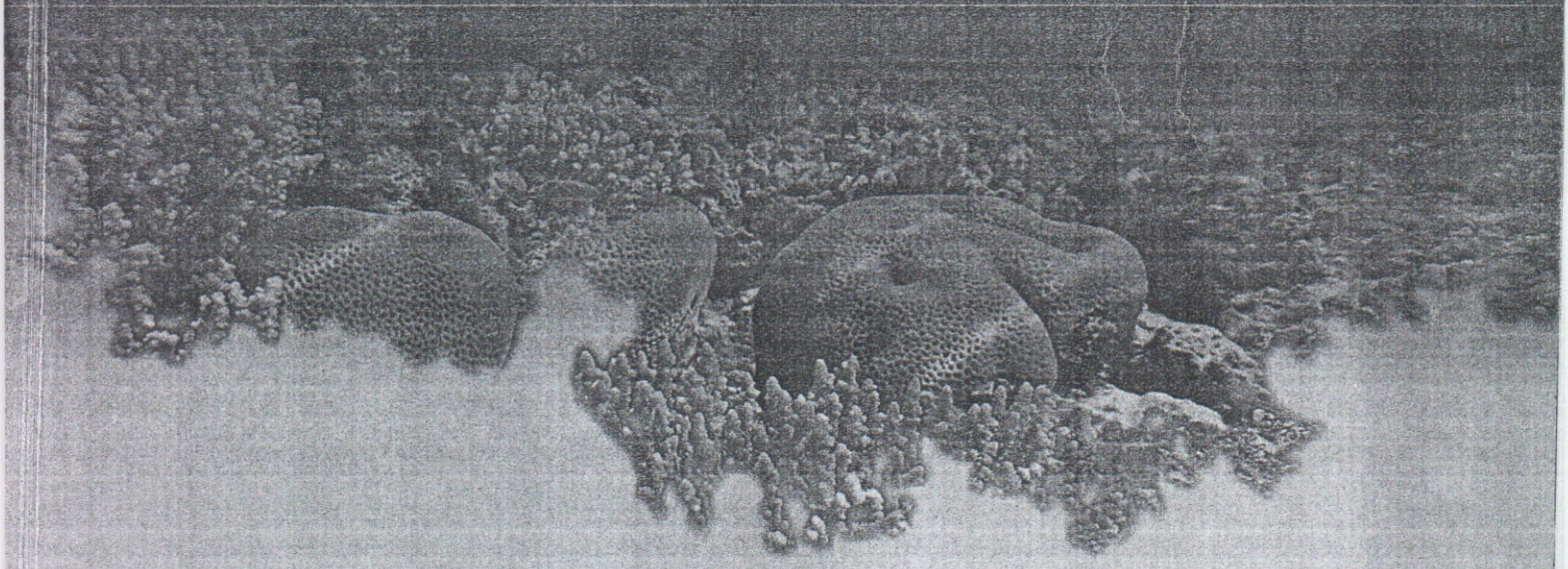
ICSM 2008

International Conference on Science and Technology of Synthetic Metals

Porto de Galinhas Brazil July 6-11, 2008



Book of Abstracts

role as a constituent of many enzymes in the human body. More than 100 zinc metalloenzymes are needed in almost all stages of both nucleic acids and protein synthesis. Its deficiency might cause a reduction in cell division, resulting in growth failure, weight loss, and impairment of tissue repair. The characterization of Yashad bhasam is carried out using a X-ray diffractometer. Yashad Bhasam supplied by Shree Baidyanath Ayurvedic Bhawan Pvt. Ltd. Allahabad, India was used without further purification. XRD patterns of bhasam were obtained on a powder X-ray diffractometer Model Rigaku D/Max 2200 diffractometer with CuKα radiation at wavelength 1.5406Å. The parameters obtained for the Yashad Bhasam were: System : Hexagonal, Lattice: Primitive, Cell parameters: a:3.253 c: 5.209. The 2-theta values of Bhsam and ZnO are shown in the Figure 1.The 2-theta and d values for Yashad Bhasam were compared with the values for ZnO. The data is given in the Table1, which shows similarities for these values.

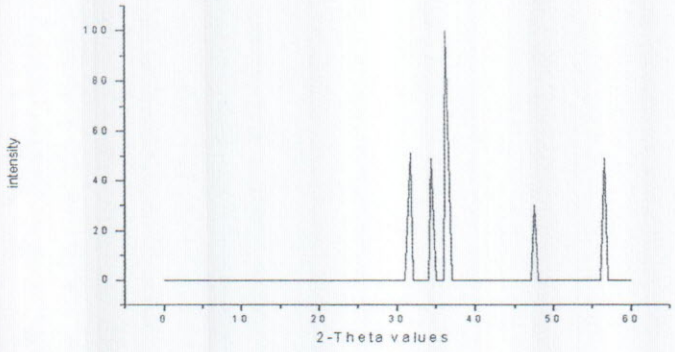


Table1: Comparison of Yashad Bhasam with ZnO

Yashad Bhasam		Standard ZnO	
2-theta	d(Å)	2-theta	d(Å)
31.791	2.8125	31.728	2.8179
34.460	2.6005	34.400	2.6049
36.275	2.4744	36.212	2.4786
47.578	1.9096	47.494	1.9128
56.637	1.6238	56.519	1.6269

1. Patwardhan Bhushan , Current Science , Vol.88, 2005. 2. Daniel M., Current Science, Vol.87, 2004, 275-276. 3. Schmidt M., Betti G. and Thomson M., Current Science, Vol.88, 2005. 4. Saper, R. B., Kales, S. N., Paquin, J.,Burns, M. J., Eisenberg, D. M., David, R.B. and Phillips, R. S., JAMA, 292, 2004. 5. Preeti Sagar Nayak and B K Singh, Bulletin of Materials Science, 30, 2007

NANOSTRUCTURED POLYANILINE FOR CARDIAC TISSUES ENGINEERING [PTh65]

Edson Giuliani Ramos Fernandes (IFSC/USP), Valtencir Zucolotto (IFSC/USP), Luiz Henrique Capparelli Mattoso (CNPDIA/EMBRAPA), Alvaro Antonio Alencar de Queiroz (UNIFEI/ICE-DFQ)

Polyaniline (PANI) is one of the most promising conducting polymers for tissue engineering applications due to their electroactive properties. The biocompatibility properties of electroconductive polymer can be improved by grafting of adhesive peptides onto PANI nanofibers during their synthesis. In this work, we mainly describe the biocompatible properties; H9c2 cardiac myoblasts proliferation and differentiation on PANI nanofibers modified by polylisine dendrimers. The detailed characterization of these nanostructured polyaniline nanofibers was carried out by UV-Vis, circular dicroism, TEM, and X-ray spectroscopy. It was observed that the application of micro-current stimulates the differentiation of cardiac cells. The electroactive and blood compatible characteristics of PANI nanofibers observed in this work demonstrate the potential of this nanostructured material for the culture of cardiac cells and open the possibility of using this material as electroactive scafold in tissue engineering.

THE SPHERULITIC GROWTH IN PVDF/CACO$_3$ NANOSTRUCTURED COMPOSITE [PM72]

Celso Xavier Cardoso (DFQB - Faculdade de Ciencias e Tecnologia - Unesp - Campus de Presidente Prudente - SP - Brazil), João Sinézio de Carvalho Campos (DTP - FEQ - Unicamp), Alexandre Antunes Ribeiro (DTP - FEQ - Unicamp), Marcos Augusto de Lima Nobre (DFQB - FC T - Unesp), Neri Alves (DFQB - FCT - Unesp)

In this work we show the process to prepare composites nanostructured of polyvinilidene fluoride and calcium carbonate (PVDF/$CaCO_3$) for uses in technological and medical applications. The composite was prepared by casting the solution of PVDF dissolved in dymetilacetamide including powder of $CaCO_3$; and they were characterized by thermogravimetry and scanning electronic microscopy. The carbonate quantity determines the porous formation and nucleation and growth of PVDF spherulitic as well the arrangements of them. In fact the microstructure and nanostructrure are modulated by the fraction of $CaCO_3$ in the composite. The heterogenic nucleation phenomena have been identified in the composite producing spherulite with diameter about 12μm. Films of composite with 5% in weight of $CaCO_3$ show the bigger growth producing spherulite with 30μm of diameter and the biggest porous density of nanostructrured porous with nanometric and micrometric size. In one more specific way we can affirm that there are a lower number of interfaces compatible with the growth process involving multiples spherulitcs. The adding of carbonate moves the thermal degradation starting for temperature 50°C higher and composites with 5% of the calcium carbonate have showed more degradation.