

3rd Annual Conference and Expo on**BIOMATERIALS**

March 05-06, 2018 | Berlin, Germany

Preparation analysis of polymer colloid of xanthan gum-chitosan/nickel nanowires**Hung-Bin Lee, Yu-Teng Chang and Kuei-Ping Liu**
Dayeh University, Taiwan

In this study, chitosan (Cs) and xanthan gum (XG) were made to react in a weight ratio of 1:1 to form a cross-linking polymer. Xanthan gum-chitosan/nanowire Ni(XG-Cs/-Ni) was prepared by the addition of nickel nanowire (NiNW) onto the XG-Cs to form the nano polymerization colloid. Field emission scanning electron microscope (FE-SEM) showed that the diameter of nickel nanowires was about 80 nm and the length was about 11 μm , with high density and high aspect ratio. The crystal planes (111) (200) and (220) [They are the growing directions of crystal planes (x,y,z)] were analyzed by X-ray diffraction (XRD). The results showed that the nanowires were fine nickel grains and had the characteristics of the crystal dislocation structure and the twin crystal structure which were observed by transmission electron microscopy (TEM). The melting points of XG-Cs/-Ni were measured by differential scanning calorimetry (DSC), they were 59.0-197.3/695.5°C. Analysis of XG-Cs/-Ni by the thermogravimetric analyzer (TGA) revealed three weight loss points.

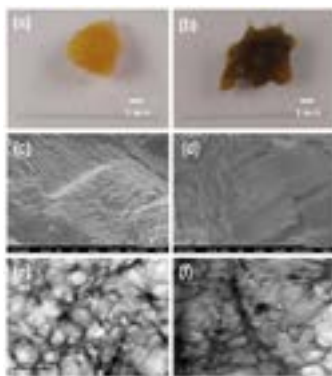


Figure 1: (a) Optical image of XG-Cs/-Ni; (b) Optical image of XG-Cs/-Ni; (c) FE-SEM image of nickel nanowires; (d) FE-SEM image of nickel nanowires; (e) TEM image of nickel nanowires; (f) TEM image of nickel nanowires.

Recent publications

1. Hung-Bin Lee and Meng Yen Wu (2017) A study on the corrosion and wear behavior of electrodeposited Ni-W-P coating. *Metallurgical and Materials Transactions A* 48:4667-4680.
2. Pin Han, Cheng-Mu Tsai and Hung-Bin Lee (2017) The proposed necessary and sufficient condition for spectral switches with concave reflectance of aluminum metal. *Advances in Mechanical Engineering* 9:1-9.
3. Hung-Bin Lee, Hsueh-Chuan Hsu, Shih-Ching Wu, Shih-Kuang Hsu, Peng-Hsiang Wang, et al. (2016) Microstructure and characteristics of calcium phosphate layers on bioactive oxide surfaces of air-sintered titanium foams after immersion in simulated body fluid. *Materials* 9:956-969.
4. H H Sheu, H B Lee, S Y Jian, C Y Hsu and C Y Lee (2016) Investigation on the corrosion resistance of trivalent chromium conversion passivate on electroplated Zn-Ni alloy. *Surface and Coatings Technology* 305:241-248.
5. H B Lee, J C Tsau and C Y Lee (2013) HER catalytic activity of electrodeposited ni-p nanowires under the influence of magnetic field. *Journal of Nanomaterials* 2013:9.

Biography

Dr. Lee has extensive expertise in performance improvement and innovation in metal corrosion and abrasion. His researches include innovative biomaterials reaction mode, the establishment of the nano-reaction mechanism based on the combination of biopolymer biomaterials, the applications of various researches of many scholars: the combination of improved and innovative adsorption method.

lhb6018@mail.dyu.edu.tw