

11th International Conference and Expo on

Nanoscience and Molecular Nanotechnology

October 20-22, 2016 Rome, Italy

Conservation of historical documents with silver/chitosan nanocomposite

Güncem Özgün Eren

Yıldız Technical University, Turkey

‘History is teacher of life’ as Romans expressed. It is a very significant matter of fact which contains the past, the present and the future of the societies, also has a very important place in improving the social consciousness. One of the most important duty of the mankind is to protect such a worthy history heritage. Archives that are made by paper are one of the main parts of our past. Paper can be deteriorated due to physical, chemical and biological based factors such as acidity, metal ions, lightning, heat, humidity, UV light, pollutants or biodeteriogens. Among these factors, for one, microorganisms can damage on papers irrevocably via releasing some reactive groups. This study is focused on conservation of historical paper samples by using silver-chitosan nano composite coating to gain antibacterial and antifungal feature. It is well known that Ag nanoparticles possess antibacterial properties. Chitosan, a polysaccharide biopolymer derived from naturally occurring chitin, displays unique polycationic, chelating and film forming properties due to the presence of active amine and hydroxyl functional groups, and is a natural polymer that is both non-toxic and biodegradable. Silver-chitosan nano composite produced at specific temperature via solvothermal method. Then, produced samples are characterized via scanning electron microscopy (SEM). Coating of sample papers are carried out by using three different methods that are called dipping, spraying and electrospinning. Afterwards, micro-organism growth was tested in Süleymaniye Manuscript Library.

Biography

Güncem Özgün Eren got Bachelor's degree and Master's degree from Metallurgy and Material Engineering Department at Yıldız Technical University, İstanbul, Turkey. During his Undergraduate and Graduate studies, he has studied some projects about nanotechnology as 'developing gas sensors', 'anti-viral and anti-microbial masks' and 'conservation historical documents'. Also, he has done researches in archaeometallurgy and has published a paper about this situation in *Journal of Turkish Studies*-Harvard University. He has finished his Master's in December 2015 and right now is doing PhD in Bioengineering Department at the same university.

guncemozgun@gmail.com

Notes: