

## عنوان مقاله:

Bio-assisted synthesis of bi-metallic (Ag-Zn) nanoparticles by leaf extract of Azadirachta indica and its antimicrobial properties

## محل انتشار:

مجله بین المللی ابعاد نانو، دوره 13، شماره 2 (سال: 1401)

تعداد صفحات اصل مقاله: 11

## نویسندگان:

.Indranil Singh - Amity Institute of Biotechnology, Amity University Madhya Pradesh, Gwalior, India, ۴۷۴۰۰۵

.Tooba Mazhar - Amity Institute of Biotechnology, Amity University Madhya Pradesh, Gwalior, India, ۴۷۴۰۰۵

.Vikas Shrivastava - Amity Institute of Biotechnology, Amity University Madhya Pradesh, Gwalior, India, ۴۷۴۰۰۵

.Rajesh Tomar - Amity Institute of Biotechnology, Amity University Madhya Pradesh, Gwalior, India, ۴۷۴۰۰۵

## خلاصه مقاله:

In the last decade, the bio-assisted synthesis of nanoparticles has been significantly exploited seeing the shortfall of chemical synthesis and urgent need to find the substitution. The chemical synthesis of nanoparticles is a rapid process, which might be appealing in various frontiers but has got some serious issues to take care of. In pursuit of finding a process that is cleaner, non-toxic, eco-friendly, low cost, and renewable, nature introduces us to the prospect of biosynthesis. In our study, we have successfully prepared bimetallic nanoparticles through a bio-assisted route. We have formed (Ag-Zn) silver doped zinc oxide nanoparticles with the help of an aqueous leaf extract of Azadirachta indica. Ag-Zn nanoparticles were further characterized by FTIR, P-XRD, SEM-EDX methods. The data obtained from X-ray diffraction has shown the peaks of silver doped zinc at  $2\theta$  value  $38.10$  thereby telling particle size is approx.  $12.53$  nm size as calculated by Scherrer's equation. FTIR analysis gave characteristic peaks of functional groups. SEM-EDX confirmed successful doping and grain size of the particle. The study has further characterized the anti-microbial activities of the Ag-Zn BMNPs (Bi-metallic nanoparticles) with the help of the Kirby-Bauer method showing maximum inhibition of Streptococcus aureus species. The result of the study can be advantageous to develop an understanding of the development of nano-based medicine.

## کلمات کلیدی:

Antimicrobial, Azadirachta indica, Bio-Assisted, nanoparticles, nanotechnology

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1455124>

