



an Open Access Journal by MDPI

Novel Antibacterial and Antimicrobial Nanoparticles for Healthcare Applications

Guest Editor:

Prof. Dr. Ana María Díez-Pascual

Facultad de Ciencias,
Departamento de Química
Analítica, Universidad de Alcalá,
Química Física e Ingeniería
Química, Ctra. Madrid-Barcelona
Km. 33.6, 28805 Alcalá de
Henares, Madrid, Spain

Deadline for manuscript
submissions:

closed (31 December 2022)

Message from the Guest Editor

Owed to the extraordinary rise in bacterial resistance towards antibiotics, infections continue to proliferate, and millions of deaths in hospitals take place. Hospital-acquired infections result in up to \$4.5 billion in additional healthcare expenses annually in the US. Therefore, infection-prevention strategies are essential. Antibacterial nanoparticles are a suitable solution to antimicrobial resistance; they not only kill antibiotic-resistant bacteria via different mechanisms, but can also be combined with antibiotics to overcome antimicrobial resistance.

Nanotechnology can be specially advantageous in treating bacterial infections. Examples comprise the use of nanoparticles in antibacterial coatings for implantable devices, in bacterial detection systems to provide microbial diagnostics, in medicinal nanomaterials to prevent infections and promote wound healing, and so forth.

This Special Issue is devoted to both original research and review papers regarding the synthesis, design and characterization of new antimicrobial nanoparticles (e.g., carbon-based, metal and polymeric) which significantly prevent the growth of bacteria, specially focused on healthcare applications.



mdpi.com/si/67583

Special Issue



an Open Access Journal by MDPI

Editor-in-Chief

Prof. Dr. Shirley Chiang

Department of Physics, University
of California Davis, One Shields
Avenue, Davis, CA 95616-5270,
USA

Message from the Editor-in-Chief

Nanoscience and nanotechnology are exciting fields of research and development, with wide applications to electronic, optical, and magnetic devices, biology, medicine, energy, and defense. At the heart of these fields are the synthesis, characterization, modeling, and applications of new materials with lower nanometer-scale dimensions, which we call “nanomaterials”. These materials can exhibit unusual mesoscopic properties and include nanoparticles, coatings and thin films, metal-organic frameworks, membranes, nano-alloys, quantum dots, self-assemblies, 2D materials such as graphene, and nanotubes. Our journal, *Nanomaterials*, has the goal of publishing the highest quality papers on all aspects of nanomaterial science to an interdisciplinary scientific audience. All of our articles are published with rigorous refereeing and open access.

Author Benefits

Open Access: free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility: indexed within Scopus, SCIE (Web of Science), PubMed, PMC, CAPlus / SciFinder, Inspec, and other databases.

Journal Rank: JCR - Q1 (*Physics, Applied*) / CiteScore - Q1 (*General Chemical Engineering*)

Contact Us

Nanomaterials Editorial Office
MDPI, St. Alban-Anlage 66
4052 Basel, Switzerland

Tel: +41 61 683 77 34
www.mdpi.com

mdpi.com/journal/nanomaterials
nanomaterials@mdpi.com
[X@nano_mdpi](https://twitter.com/nano_mdpi)