Special Issue

Colloidal Quantum Dots: Synthesis, Physics and Applications

Message from the Guest Editors

Colloidal quantum dots represent a promising class of solution processible semiconductors with a wide range of applications ranging from light harvesting and light emission to lasing and photocatalysis. The choices of the semiconductor core, sizes, defects, ligands that bind to the surface, and the arrangements in thin film devices allow quantum dots properties to be highly tunable. Quantum dots have also found commercial success in display technology, spurring further research into improving their synthesis and manufacturing processes. More recently, efforts have focused on reducing toxicity in these materials, such as using lead-free and cadmium-free alternatives. Additional functionalities have been endowed onto quantum dots—for example, through the doping of the semiconductor core with magnetic elements or chiral ligands for application in spintronics. These experimental advances have also been accompanied by our increased understanding of the underlying physical processes, such as exciton transport, self-trapped exciton, and defect physics.

Guest Editors

Dr. Yun Liu

Institute of High Performance Computing, A*STAR, Singapore 138632, Singapore

Prof. Dr. Zhilong Zhang

School of Emergent Soft Matter, South China University of Technology, Guangzhou 510640, China

Deadline for manuscript submissions

closed (30 September 2023)

Micromachines

an Open Access Journal by MDPI

Impact Factor 3.0
CiteScore 6.0
Indexed in PubMed

mdpi.com/si/165457

Micromachines
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
micromachines@mdpi.com

mdpi.com/journal/micromachines

Micromachines

an Open Access Journal by MDPI

Impact Factor 3.0
CiteScore 6.0
Indexed in PubMed

mdpi.com/journal/micromachines

About the Journal

Message from the Editor-in-Chief

You are invited to contribute research articles or comprehensive reviews for consideration and publication in *Micromachines* (ISSN 2072-666X). *Micromachines* is published in the open access format. Research articles, reviews and other contents are released on the internet immediately after acceptance. The scientific community and the general public have unlimited free access to the content as soon as it is published. As an open access journal, *Micromachines* is supported by the authors or their institutes by payment of article processing charges (APC) for accepted papers. We are pleased to welcome you as our authors.

Editor-in-Chief

Prof. Dr. Ai-Qun Liu
1. Department of Electrical and Electronic Engineering, The Hong Kong Polytechnic University, Hong Kong, China
2. School of Electrical and Electronic Engineering, Nanyang Technological University, Singapore 639798, Singapore

Author Benefits

High Visibility:

indexed within Scopus, SCIE (Web of Science), PubMed, PMC, Ei Compendex, dblp, and other databases.

Journal Rank:

JCR - Q2 (Instruments and Instrumentation) / CiteScore - Q1 (Mechanical Engineering)

Rapid Publication:

manuscripts are peer-reviewed and a first decision is provided to authors approximately 17.2 days after submission; acceptance to publication is undertaken in 1.9 days (median values for papers published in this journal in the first half of 2025).

MDPI