Correction | Open Access

Chemical Synthesis

Wang. *Chem. Synth.* **2026**, *6*, 64 **DOI:**10.20517/cs.2026.47

Correction: Self-assembled nanostructures and materials: smart and bright!

Chen Wang*

Citation: Wang, C. Correction: Self-assembled nanostructures and materials: smart and bright!. *Chem. Synth.* **2026**, *6*, 64. https://dx.doi.org/10.20517/cs.2026.47

Received: 27 Jul 2026
Accepted: 31 Jul 2026
Published: 4 Aug 2026

Academic Editor: Bao-Lian Su
Copy Editor: Pei-Yun Wang
Production Editor: Pei-Yun Wang

Correction to *Chem Synth* 2023;3:36.

To better introduce the aims and scope of the Special Issue on Self-Assembled Nanostructures and Materials, the author has made the following corrections to the Editorial: the descriptions corresponding to References 11 and 13 have been removed to align the content more closely with the overarching objectives of the Special Issue. Reference 12, which corresponds to an article published in the Special Issue, has been added.

Consequently, the reference numbering in the original text has been updated accordingly (the subsequent references have been renumbered sequentially).

We apologize for any inconvenience this may have caused and confirm that the scientific conclusions are entirely unaffected. The original article has been corrected.

Revised version:

Self-assembly is a widely observed phenomenon in the natural world, where building blocks (e.g., small molecules, macromolecules, colloids, macroscopic particles, *etc.*) are synergistically organized through multiple weak interactions to form dynamic multi-component assembled systems in a programmable and controllable manner[1-3]. This enables the creation of various nanostructures and materials with tailored properties and complex functions. The development of artificial molecular assembly and biomimetic assembly research can provide new methods and tools for investigating and understanding the thermodynamics and kinetics of self-assembled processes. By deeply understanding self-assembly at the molecular level, researchers step forward to fabricate self-assembled nanostructures or materials with desired geometries and properties, providing more opportunities for high-performance applications, such as therapy, imaging, energy harvesting, catalysis, signal dynamics regulation, and so on[4-6]. Through the elaborate design of molecules or building blocks with desired structural parameters and optimization of experimental

School of Chemistry and Molecular Engineering, East China Normal University, Shanghai 200241, China.

***Correspondence to:** Chen Wang, School of Chemistry and Molecular Engineering, East China Normal University, Shanghai 200241, China. E-mail: cwang@chem.ecnu.edu.cn

conditions to control assembled pathways, various materials with advanced and improved functions could be envisioned.

The Special Issue focuses on recent progress in self-assembled structures or materials across broad interdisciplinary areas, which involve organic/inorganic chemistry, polymer chemistry, colloid and surface chemistry, nanotechnology, soft materials, and materials science. Recently, many scientists have developed self-assembled systems based on biopolymers, such as DNA, proteins, and polypeptides, as well as other natural or synthetic biopolymers[7,8]. For example, Zhong *et al.* utilized the dynamic and exchangeable nature of DNA hydrogen bonding to build a series of artificial dynamic nucleic-acid-based networks[9]. Their review highlights the potential of DNA networks to mimic biological transformations and addresses the challenges of building dynamic networks with life-like behavior in cell-like confined environments. Beyond supramolecular DNA-based nanotechnology, Sun *et al.* summarized recent advances in host-guest assemblies for enhanced photothermal therapy[10]. Leveraging the dynamic features and unique microenvironments of host-guest complexes, they discussed improved photothermal efficiency, enhanced distribution at target cancer sites, and multimodal therapy. This opens an alternative avenue for high-performance biomedical applications. Besides utilizing the self-assembly concept in biomedical areas, different self-assembled materials with porous structures have emerged for water harvesting[11]. By designing and tuning the pores and exo- or endo-sites of porous materials, the interactions between adsorbents and water can be well regulated; thus, water absorption into such materials is achieved efficiently. Recent progress in the fabrication of two-dimensional mesoporous materials has been reported[12].

The above-mentioned examples highlight the significant potential of self-assembly chemistry in boosting elaborate design and synthesis of advanced supramolecular systems. We hope to stimulate further endeavors to create materials that have not yet been possible in the synthetic world and to fully explore their potential in diverse applications.

DECLARATIONS

Authors' contributions

The author contributed solely to the article.

Availability of data and materials

Not applicable.

AI and AI-assisted tools statement

Not applicable.

Financial support and sponsorship

None.

Conflicts of interest

The author declared that there are no conflicts of interest.

Ethical approval and consent to participate

Not applicable.

Consent for publication

Not applicable.

REFERENCES

1. Li, Z.; Fan, Q.; Yin, Y. Colloidal self-assembly approaches to smart nanostructured materials. *Chem. Rev.* **2022**, *122*, 4976-5067. DOI PubMed
2. Boles, M. A.; Engel, M.; Talapin, D. V. Self-assembly of colloidal nanocrystals: from intricate structures to functional materials. *Chem. Rev.* **2016**, *116*, 11220-89. DOI PubMed
3. Liu, G.; Humphrey, M. G.; Zhang, C.; Zhao, Y. Self-assembled stereomutation with supramolecular chirality inversion. *Chem. Soc. Rev.* **2023**, *52*, 4443-87. DOI PubMed
4. Sinha, N. J.; Langenstein, M. G.; Pochan, D. J.; Kloxin, C. J.; Saven, J. G. Peptide design and self-assembly into targeted nanostructure and functional materials. *Chem. Rev.* **2021**, *121*, 13915-35. DOI PubMed
5. Zhang, X.; Gong, C.; Akakuru, O. U.; Su, Z.; Wu, A.; Wei, G. The design and biomedical applications of self-assembled two-dimensional organic biomaterials. *Chem. Soc. Rev.* **2019**, *48*, 5564-95. DOI PubMed
6. Li, C.; Li, Q.; Kaneti, Y. V.; Hou, D.; Yamauchi, Y.; Mai, Y. Self-assembly of block copolymers towards mesoporous materials for energy storage and conversion systems. *Chem. Soc. Rev.* **2020**, *49*, 4681-736. DOI PubMed
7. Wang, C.; Zhang, J. Recent advances in stimuli-responsive DNA-based hydrogels. *ACS. Appl. Bio. Mater.* **2022**, *5*, 1934-53. DOI PubMed
8. Wang, C.; Willner, B.; Willner, I. Redox-responsive and light-responsive DNA-based hydrogels and their applications. *React. Funct. Polym.* **2021**, *166*, 104983. DOI
9. Zhong, R.; Yi, L.; Wang, X.; Shu, W.; Yue, L. Bioinspired nucleic acid-based dynamic networks for signal dynamics. *Chem. Synth.* **2023**, *3*, 27. DOI
10. Sun, X.; Ye, Q.; Zhou, J.; Han, J.; Guo, R. Host-guest assemblies for improved photothermal cancer therapy. *Chem. Synth.* **2023**, *3*, 16. DOI
11. Zhang, S.; Fu, J.; Xing, G.; Zhu, W.; Ben, T. Recent advances in porous adsorbent assisted atmospheric water harvesting: a review of adsorbent materials. *Chem. Synth.* **2023**, *3*, 10. DOI
12. Feng, D.; Li, X.; Zhang, L.; Qiao, Z. A. Self-assembly method for two-dimensional mesoporous materials: a review for recent progress. *Chem. Synth.* **2023**, *3*, 37. DOI