
Editorial

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Biographical notes: B. Nagaraj is working as a Professor and Dean in the Rathinam Group of Institutions, Coimbatore, India. He received his ME and PhD from Anna University and Karpagam University in 2004 and 2010, respectively. In 2005, he became a Lecturer in Kamaraj College of Engineering, India and he worked there for 12 years in various positions. His technical expertise and research interests include control systems, automation, soft computing, and high-speed signal processing. He received Best Researcher Award from Karunya University in 2010. He is the author or co-author of more than 48 refereed publications in journals and conferences. He has applied for five patents and is published in Indian Patent Journal. He is a member of various professional bodies including IEEE, MAENG, IACSIT, ISTE, and IETE. He is a reviewer for various journals for Elsevier, Wiley, Inderscience, etc., and he has been the Guest Editor for special issues for Hindawi, Elsevier, Inderscience, Springer, etc.

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Many scientists and researchers have demonstrated the influence of nanotechnology in the field of biotechnology. The involvement of nano-biotechnology provides scope for an advanced and healthy future for the welfare of humans. We hope that our special issue on nano-biotechnology will help in early diagnosis and targeted therapy, leading to significant progress in accelerating precision medicine applications. The use of nano-biotechnology for the development of novel focused nano-carrier systems has the potential to offer improved biomedicines, which are delivered through improved pharmacokinetics, pharmacodynamics, and safety profiles. Additionally, many authors contributed their research articles based on the nano-carrier system’s multifunctional characteristics, which allow for simultaneous imaging of various types of cancer or the microenvironment, enabling targeted drug delivery and monitoring. On the other hand, the applications of optimisation techniques in the field of analytics are becoming increasingly important in the current scenario of fully automated systems, which would help in accurate identification of anomalies and provide excellent management among the systems, primarily for the applications related to remote sensing.

During the previous decade, soft computing has emerged as a potential candidate for solving complex and intricate global optimisation problems, which are otherwise difficult to solve by traditional methods. In the present scenario, the image processing, signal processing, industrial optimisation, control system applications, and power system application fields have challenging problems that need to be unravelled by researchers. The intelligent methods have been successfully applied to a wide range of benchmark and real-world application problems. These algorithms are being enhanced with machine-to-machine learning to solve the non-linearity nature of the algorithms. The applications of

this technology include diseases, early detection, timely intimation, much elder status detection, etc. The technology for the internet of things, especially nanodevices, has many challenges and hurdles that need good optimisation through intelligence.

This special issue highlights the emerging challenges and advancements in implementing nano-biotechnology to fetch and diagnose real-time biomedical data to perform intelligent analytics for the welfare of humans and society. This special issue is an ideal platform for researchers to come up with innovative ideas and approaches in the area of intelligent nano-biotechnology. This special issue gains much importance since it directly affects many fields of society.

We wish to thank the Editor-in-Chief of *International Journal of Nanotechnology*, Prof. Lionel Vayssieres, and Inderscience Publishers for giving us the opportunity to serve as Guest Editors of this special issue 'Intelligent Nano-biotechnology for the Future: Emerging Challenges and Advancements'. It has been a real pleasure. We also express our gratitude to all the members of the editorial office, the authors who made wonderful research contributions, and to the independent reviewers who made this special issue possible. We hope that it will be of high interest to the reader, as we consider the contributions contained in it.