Introduction

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Biographical notes: A. Suresh works as a Professor and Head of the Department of the Computer Science and Engineering at the Nehru Institute of Engineering and Technology, Coimbatore, Tamilnadu, India. He has more than two decades of experience in teaching and his areas of specialisations are data mining, artificial intelligence, image processing, multimedia and system software. He has published 55 papers in international journals and more than 40 papers in national and international conferences. He has one pattern in the name of rear view optimised safety helmet. He has served as a member of

editorial and reviewer for Springer, Elsevier and Inderscience journals, etc. He is a member of ISTE, IEEE, MCSI, IACSIT, IAENG, MCSTA and global member of Internet Society (ISOC). He has published four books, in the name of data structures and algorithms, computer programming, problem solving and python programming and programming in C.

T.D. Ramadasan is currently working as a Professor in the Department of Civil Engineering at the Adhiparasakthi Engineering College, Melmaruvathur. He has around 15+ years of teaching experience at various engineering colleges with industrial experience of around one year. He has published around five international journals and six national journals. He has published a book titled *Hydrology* in coordination with Sri Krishna Hightech Publishing Company Pvt., Ltd. He has obtained three funding projects in the areas of municipal wastewater treatment using algae, conversion of waste to building materials and bagasse ash bricks, treatment of waste water using nano film from Tamilnadu State Council for Science and Technology.

R. Jothikumar is currently working as a Professor in the Department of Computer Science and Engineering at the Shadan College of Engineering and Technology, Peerancheru, Hyderabad. He has completed his Doctoral from the Noorul Islam Centre for Higher Education, Nagercoil, Tamilnadu in 2017 and MTech CSE from the Dr. M.G.R University, Chennai. Right now, he has 14 years of teaching experience in various primer institutions. He has published around five Scopus indexed journals and one SCI indexed journals, serving as a guest editor for journals right now.

G. Vijayaraghavan has around 13+ years of teaching experience in various well reputed engineering colleges. He has an expertise in the area of chemical and environmental engineering. He has published around 15 international journals, two national journals and around 11 national and international conference publications. His areas of interest include waste recovery, waste minimisation, environmental impact assessment and waste water treatment. His current ongoing project is on treating the textile waste water using novel coagulants.

Yung-Tse Hung has been a Professor of Civil Engineering at the Cleveland State University, Cleveland, Ohio, USA since 1981. He obtained his BS and MS in Civil Engineering from the Cheng Kung University in Taiwan and PhD in Environmental Engineering from the University of Texas at Austin in 1970. He has been on faculty and taught at 16 universities in eight countries. His primary research interests are in biological wastewater treatment, industrial water pollution control and industrial waste treatment, and municipal wastewater treatment. He has about ten books, 450 reports and journal publications and conference presentations.

These issues deliberated by many of the authors are of boundless significance. Our team of guest editors played major role in releasing the issue with high quality. After the screening process and initial survey, we have carefully chosen quality manuscripts for the further review and modification process. Finally, 21 papers were selected for contributing in the special issue. We would like to convey our sincere thanks to all the reviewers for their infinite efforts and contributions. Also we thank the authors for contributing their quality works for this special issue. The papers and the concepts shared in this issue are highly relevant, precise and timely for the special issue. This is a useful area for the current trend of life and we believe that this issue will inspire the future work in order to gain better understanding.

This special issue will enlighten the current researchers and the industries which are generating the large quantities of waste. Out of the developed recent methods, optimising the process parameters or properties of waste, like pH, temperature, concentration, etc. can be effectively done by suitable simulation techniques with the ample knowledge on computer programming and the latest software.

The paper by S. Sankar Ganesh et al. described the air quality index forecasting using artificial neural networks. Air is the most vital constituent for the sustenance of life on earth. Air pollution is the major problem we have been facing. It is addressed in this issue which will pave a way for healthy life. Forecasting of air quality will contribute to a healthy society. This issue will create awareness among the readers and to educate them about the sustainability of the environmental resources. The readers will also have the scope of knowing the computational techniques like bioinformatics to construct sustainable nature and the current waste and wastewater disposal practices will be enhanced.

Annelise Nairne Schamne and André Nagalli described about the evaluation of the potential application of the precepts of solid waste reverse logistics (RL) to the civil construction sector. Construction and demolition waste (CDW) management is still a challenge in most Brazilian municipalities. The authors evaluated the potential application of RL principles in CDW management in the civil construction sector in the Brazilian City of Curitiba and proposed a conceptual model to help in the CDW management. Ajay Satija et al. presented about the chemical compositions of municipal solid waste. The waste disposal facilities need to be revamped for which proper strategies have to be developed and adopted by the municipal corporation. Waste-to-energy and compost formation are sustainable solutions for waste disposal practices. The chemical characteristics of municipal solid waste of 36 samples from seven different sources have been analysed. It is believed that the sustainability can also be achieved by green chemistry principles, i.e., without using more toxic and hazardous raw materials.

Joshua Funminiyi Obisanya et al. described about the evaluation of biodiesel potential of sewage sludge. The energy storing potential of sewage sludge of a waste water treatment facility called sewage treatment oxidation pond (STOP) was explored in this issue with a view to assessing its potential in biodiesel development. Luis Felipe Barrera Payan and Daniel Cauich Lopez described the small-scale steam turbine and electric generation from municipal solid waste. It focuses on the benefits that waste-to-energy facilities bring to small communities and even large ones. Finally, the work of all the authors in this special issue is original and of high quality.

The final selection of accepted papers represents the current waste management systems with the cost effective way in the current world and industrialised sectors. The papers in this issue were exploiting the environmental resources in detail in all aspects. Energy recovery and harvesting from the waste resources as well as the innovative techniques were described by many authors. We believe this issue will inspire further research work into this area.