Introduction

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Biographical notes: R. Praveen Kumar is a postgraduate in Industrial-Biotechnology and undergraduate in Chemical-Engineering. His research area includes synthesis of value-added products and renewable energy from biomass and municipal-waste, purification-extraction of phytochemical compounds. He has published 37 papers, co-authored two books and a book chapter, and he has done provisional registration for two Indian patents. He was the chair for 1st and 2nd International Conference on Bioenergy, Environment and Sustainable Technologies (BEST2013-BEST2015) and organised various symposiums and conferences. He is a life-member in various professional societies includes BRSI, IICHE, IFIBiop, BigFin, ISTE, EWBIndia. Currently, he is serving as management council member in BRSI.

1 Introduction

Increased concerns over depleting energy resources and its implacable effect on environment are a big threat to human. Several efforts were taken by researchers to overcome this issue which can be a saviour for the future generations. Even though efforts were made, they should be communicated to the co-researchers for knowledge upgradation. In this line Department of Biotechnology of Arunai Engineering College, Tiruvannamalai, Tamilnadu, India has organised a four day conference '2nd International Conference on Bioenergy, Environment and Sustainable Technologies (BEST2013)' during 28-31 January 2015. Several papers were presented orally in the theme of this conference, among which best papers were offered a chance to published in the special issue of *International Journal of Energy Technology and Policy* in the theme 'Advances in renewable energy research'. Totally, 19 papers were finalised after peer review, the special issue is divided into two parts. Part 1 contains nine research papers and part 2 contains ten research papers.

2 A brief introduction to part 2

The first paper by Selvarasu et al. was about the optimal placement of SVC for transmission loss minimisation using self-adaptive firefly algorithm. The authors concluded that with the proposed algorithm it is possible for the utility to place SVC devices in transmission network such that proper planning and operation can be achieved with minimum system losses.

The second paper entitled 'STATCOM analysis of twin converter using PWM technique' by Sathiyanarayanan et al., suggested that twin converter-based STATCOM model is more effective in maintaining simple and fast voltage regulation at any point in the transmission line compared to conventional STATCOM with reduced THD value. 12-pulse VSC-based STATCOM is modelled and simulated using the power system block sets of Simulink.

The next paper by Gopinath et al., discusses about the performance analysis of turbulent flow horizontal axis micro wind turbine.

After this, Ganesh and Srinivas presented a paper on 'Energy efficient power generation systems at low and medium heat recoveries' where thermo-economic evaluation of a vapour power generating cycle which is called as Kalina cycle system (KCS) suitable for low, medium and high temperature heat recoveries with binary ammonia-water mixture as the working fluid, they concluded that the medium temperature Kalina cycle system (MTKCS) is giving higher performance.

The next paper by Prathap et al. is about constructed wetland, in this paper, authors provided a cost effective alternative technology for the removal of contaminants from wetland.

Subsequently, Ravichandran et al. studied the performance evaluation of photovoltaic grid connected shunt active power filter. They concluded that the proposed PQ theory can be applied to maximise the real power extraction from variety of renewable energy sources, distinctively for solar systems.

The next paper is about designing a low cost filter for eliminating hormonics in CFL. This paper reports experimental measurement results regarding harmonic issues and design a filter to eliminate the harmonics in CFLs.

In the next paper, Thanikachalam and Nagaraj presented a work on optimised design for magnetorheological brake using DOE methods. In this paper, they have optimised the design by using COMSOL Multiphysics R Software and with design and analysis of experiments.

Subsequently, Socrates and Shankar reported about Sago industry effluent treatment using *Gliocladium roseum*. They had suggested that the particular effluent is rich in minerals and carbohydrates and hence can be used for the production of renewable energy.

The last paper is about the investigations on hybrid carrier PWM strategies for symmetrical multilevel inverter was done by Venkataramanan et al. In this work, the hybrid carrier scheme was executed through single phase symmetrical multilevel inverter.