

Discovery

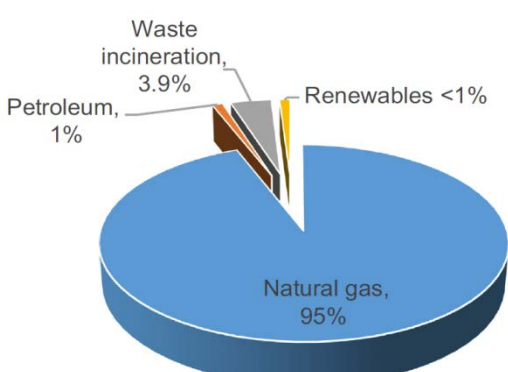
We SHARE to inspire and ignite ideas for Engineering Systems & Design (ESD) Pillar!

The titles featured here are to give you a peek into the wealth of resources we have. We hope, through this will encourage you to explore and read further. Share with us topics of importance to ESD and we can introduce relevant titles from some 400,000 eBooks we carry.

June 2016

FACULTY WORKS

Temporal CO₂ Emissions Associated with Electricity Generation: Case Study of Singapore

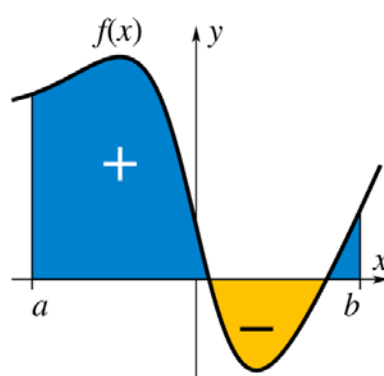


By Prof Lynette Cheah, ESD

In the need of studying temporal emission patterns from electricity generation, the authors found that a great reduction of CO₂ emissions can be realized in the daytime and policy makers may employ the proposed approach to better understand carbon footprint in the cities.

Source: [Energy Policy](#) (June 2016)

Integrals of K and E from Lattice Sums



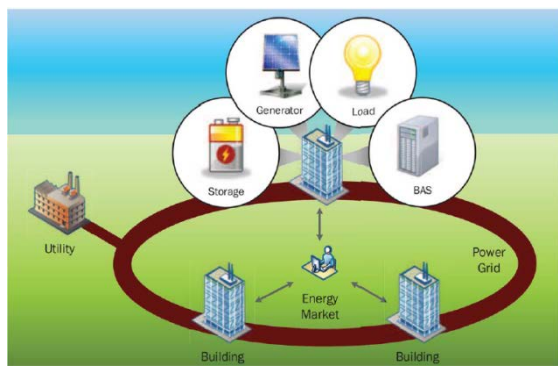
By Prof James Wan, ESD

The authors used various methods to derive new lattice sums evaluations from K integrals. These methods include making use of rich structures connecting complete elliptic integrals, Jacobi theta functions, lattice sums, and Eisenstein series.

Source: [The Ramanujan Journal](#) (June 2016)

FACULTY WORKS

Power Management of Intelligent Buildings Facilitated by Smart Grid: A Market Approach



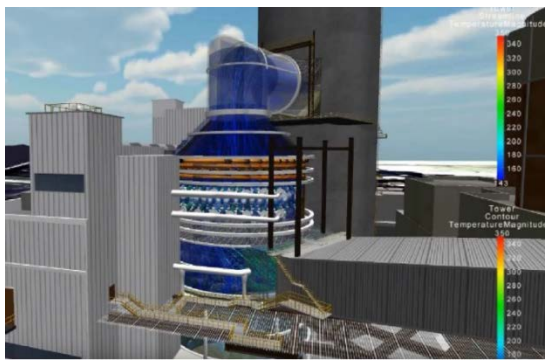
By Quang Duy La, Temasek Laboratories

Smart buildings are able to exchange power by selling surplus power and buying in when in deficit. Researchers developed a dynamic pricing model together with analysis algorithms to show how market players can maximize their profits. Simulation studies carried out show this approach optimizes the profits in the long run as compared to other power management solutions.

Source: [IEEE Transactions on Smart Grid](#) (May 2016)

OPTIMIZATION

Integration of Advanced Simulation and Visualization for Manufacturing Process Optimization

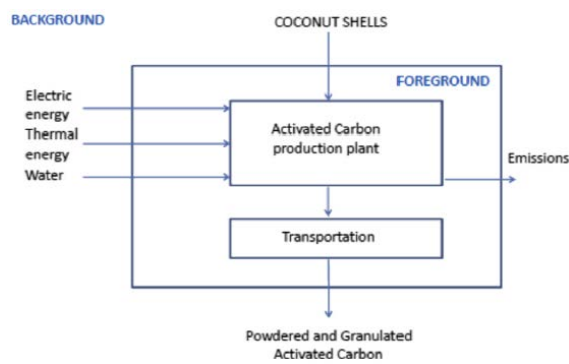


The authors established engineering methodologies for integrating simulation and visualization technologies in diverse manufacturing activities. It is found that the methodologies are significant to virtual design and training, so as to further contribute to the efficiency, effectiveness and economy of the manufacturing chains.

Source: [JOM](#) (May 2016)

LIFE CYCLE ASSESSMENT

Life Cycle Assessment of Activated Carbon Production from Coconut Shells



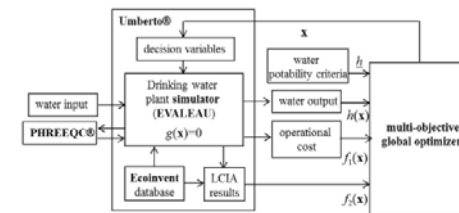
The paper looks into the environmental impacts of the manufacturing process of activated carbons made from coconut shells in Indonesia. It is suggested that by using the electricity generated from reproducible sources, the sustainability of the production could be significantly improved.

Source: [Journal of Cleaner Production](#) (July 2016)

Cost Versus Life Cycle Assessment-based Environmental Impact Optimization of Drinking Water Production Plants



Fig. 1. Flowchart of the drinking water production plant used in the case study.

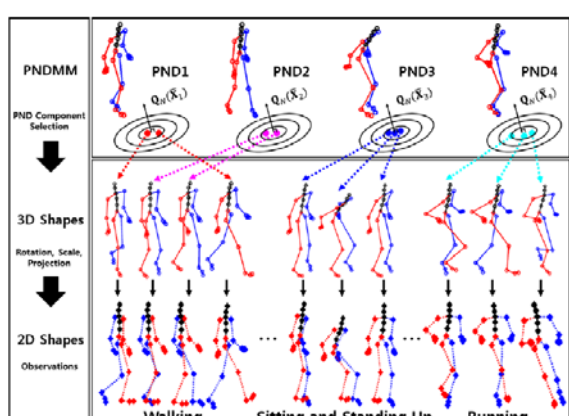


Minimizing the environmental burden while keeping the production cost low has recently become a primary concern in global industries. The authors examined and compared six optimization algorithms in settling the issue for the drinking water production plants (DWPPs) sector.

Source: [Journal of Environmental Management](#) (July 2016)

STATISTICS

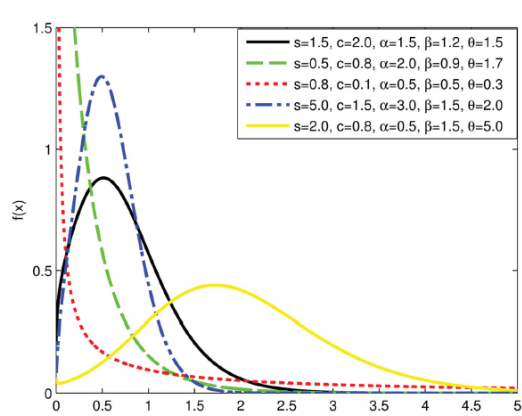
Complex Non-rigid 3D Shape Recovery Using a Procrustean Normal Distribution Mixture Model



In this paper, the authors put forward a probabilistic generative model that aims to recover non-rigid 3D shapes of intricate shape variations that are thought to be reproducible by probabilistically mixing the primitive shape variations together. The method is statistically supported to be superior to the existing methods.

Source: [International Journal of Computer Vision](#) (May 2016)

A New Compound Class of Log-logistic Weibull-Poisson Distribution: Model, Properties and Applications



The authors proposed a new flexible class of log-logistic Weibull-Poisson (LLOGWP) distribution for lifetime data and further studied the statistical properties of the model. The proposed distribution was also applied to real data sets and it was statistically examined to be applicable and useful.

Source: [Journal of Statistical Computation and Simulation](#) (2016)

For more articles or in-depth research, contact us at library@sutd.edu.sg!
An SUTD Library Service©2016