



## *ISIE and IE News*

### **Gordon Conference 11-16 July**

The deadline for applying to the 2010 Gordon Research Conference on Industrial Ecology is **20 June 2010**.

The conference theme, From Analysis to Design is well conceived and the program features several high profile presenters, including Michael Braungart, co-author of Cradle to Cradle and currently at Erasmus University, William Flanagan from GE Global Research and Andy Baynes from Apple.

Conference dates are 11-16 July and the meeting will take place at Colby-Sawyer College in New Hampshire, USA. For more information go to:  
<http://www.grc.org/programs.aspx?year=2010&program=industeco>

### **ISIE Asia-Pacific Meeting**

*Strengthening Industrial Ecology for the Asia-Pacific Region*

### **ISIE MFA-ConAccount Meeting**

*Material Flow Analysis (MFA) for the Future*

### **7-9 November 2010, Tokyo**

The deadline for abstract submission has been extended to **14 June 2010**. For more information about these meetings go to  
<http://www.isieapmfa.info/page/scope.html>



### Keeping it Succinct: Limits on the Length of JIE articles

**Reid Lifset** (reid.lifset@yale.edu)

As industrial ecology and the JIE continue to pick up momentum, the constraints we face regarding the number of pages available in the JIE become more binding. Journals face a “page budget”—the total number of pages that may be published in a volume. This of course is a function of the financial budget (because more pages cost more money) which is in turn shaped by the market for journal subscriptions. The JIE often works to circumvent the constraints imposed by the page budget by obtaining external funding to publish extra pages at no additional cost to the subscribers.

Even so, there is a limit. To help address this, the JIE has a limit on the length of submissions—7,000 words including references. To that word limit, a limit on the number of figures and tables is now being added. Submissions should have no more than a combined total of eight tables and figures. Exceptions regarding word or table/figure limits may be made when a persuasive case is presented. Authors may request permission to submit papers that exceed these limits only with the understanding that after the review process is completed, the authors may be required to reduce the length of the paper based on feedback from either the reviewers or the editor.

The “supplementary material”, i.e., the electronic appendices that are posted on the JIE web site, provide something of a safety valve for extra tables, figures and sometimes even text that enhance the message of the main article.

### Upcoming Special Issues

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Plans are in various stages of development for special issues on several topics central to industrial ecology: industrial symbiosis, extended producer responsibility (EPR) and greening growing giants. The latter, a phrase coined by Marina Fischer-Kowalski, refers to rapidly growing economies such as China and India. A formal call for papers for each of these special issues will be distributed when the details are finalized.

## Conference Reports

### Advanced Biofuels Leadership Conference

**Kullapa Soratana** (kus8@pitt.edu)

The Advanced Biofuels Leadership Conference, “The First Billion Gallons” was an event for advanced biofuels stakeholders to connect and collaborate. The more than 200 participants represented producers, investors, partners, and academics, as well as policymakers from EPA, DOE and USDA. Alliance Biofuels Conferences, LLC organized the conference, which was held in Washington DC 27-29 April.

The issues presented and discussed in this conference were policies (e.g. renewable fuel standards, tax policy, energy bill), feedstocks (soybean, sugar cane, rice husk, jatropha, algae), and processing technologies (intellectual property technologies), which are key factors in driving advanced biofuels toward commercialization.

The Legislation, Business and Collaboration Strategies panel consisted of experienced leaders, at the director or CEO level, from private companies, EPA and USDA. Several ideas were discussed relevant to implementing advanced biofuels, including that producers should think beyond renewable fuel standards by looking into other related legislation, tax credits, economic and social aspects.

Environmental impacts of biofuels were also discussed. One of the main issues relates to the lack of sustainability indicators. Some participants suggested that those indicators should be identified as a feedstock certification. Employing a decision matrix was another tool suggested for the optimal feedstock specification in different regions throughout the country. Life cycle assessment (LCA) was also utilized as part of the production

system design to locate hotspots of the system. The system can, therefore, be improved and be more environmentally friendly. Additionally, collaboration among stakeholders is necessary to develop this advanced biofuels technology to the next step.

There were several round-table discussions at the conference, including a strong focus on the algal biofuels. Because the major participants were from industry, the discussion was directed toward financial and business feasibility. Three main conclusions from the discussion were 1) algae are a crop, not a fuel feedstock. Therefore, valuable products from algae should be considered to make the biofuels production process more



economically feasible. However, some participants suggested different perspectives by focusing on fuel as a main product and developing other derivatives later, 2) the cost of algae fuel production can be brought down by scaling up the system and 3) there is no standard model in algae biofuel

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## *more Conference Reports*



*Biofuels continued*

production. A production system depends on the product of concern. Moreover, co-locating of algae fuels production and CO<sub>2</sub> emission source should be considered.

In terms of environmental implications, LCA was only mentioned a couple of times in the conference. Most companies defined sustainability in term of less resource consumption, which was not from life cycle perspective. Hence, while LCA is recognized by companies as useful tool, its full capabilities and integration into business practices is not prolific.

This conference presented the current state and trends of the advanced biofuels industry. Financial issues seem to be the most important limitation to the companies' success in developing advanced biofuels. Based on the participation and discussions at this conference, academia and industry related to advanced biofuels seem to be working in isolation, however there is significant potential for the two arenas to assist one another and project a sustainable direction for the achievement of sustainable biofuel production.

### **Asian EIC Workshop**

#### **Anbumozhi Venkatachalam**

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A Workshop on Eco-Industrial Clusters: Policies and Challenges was held at the Asian Development Bank Institute, 8-11 December 2009. More than 30 senior officials from the Ministries of Industry and Environment as well as local governments representing 14 economies participated the workshop. This training program looked at the sustainability challenges that industrial clusters face and discussed strategies for transforming industrial clusters into eco-friendly economic zones.

It was observed that most of the countries in Asia are struggling to cope with the negative impacts of industrial clustering. Inspired by the theory of industrial ecology and business competitiveness, eco-towns or eco-industrial parks are frequently promoted in many localities as a strategy for reducing the environmental burden of clustered industrial activities in a way that is consistent with economic development. Yet the reach of those eco-approaches are limited to traditional manufacturing industries concentrated in urban areas. For countries still focusing on manufacturing they are good models to follow.

For other countries looking beyond simple manufacturing and which are adopting new kinds of industries, it is the urban fringe areas, the zones of transitions which begins with the edge of residual green space, that offer an opportunity for equitable growth. These areas are already used as sites for new industries that want equal access to raw materials as well as to urban markets. However, rather than just co-existing, these

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*EIC continued*

companies could become interconnected, sharing resources and achieving economic, social and environmental success. Transforming industrial clusters into eco-industrial clusters (EIC) is one of the essential steps in moving towards sustainable regional development.

The key foundations of EICs, as can be learned from regional experiences are inter-firm networks, enabling technologies, social capital and public policy support. It is important that this infrastructure should be created simultaneously with new industries, and not after environmental problems have already developed, as has been done in the past. Inter-firm networks shall be the main strategy to make the existing clusters as environmental friendly one. Integrated policy guidance, focused business leadership with clear objectives and good market orientation is essential for the success of such inter-firm networks to evolve.

The potential is high for bottom up strategies like inter-firm networks but they have to be accompanied by social capital creation. More than several years of cluster based continuous consultation process, supportive knowledge networks and capacity building activities will create necessary momentum to enable inter-firm networks, eco-innovations and new business strategies to become a reality within a cluster.

The group discussions at the workshop revealed that EICs in urban-rural fringe areas can have a unique environmental approach to wealth creation. It showed a vision in which small and medium enterprise (SME) clusters in disinvested neighborhoods could achieve greater self-sufficiency and create wealth for themselves if there are strong policy supports that make technology flow

into the cluster with innovative financial mechanisms. However, country experiences also indicate that permeation of such eco-initiatives into clusters located in inner regions tend to be slow unless accelerated by the government through infrastructure, institutional and policy support.

Generally speaking, EICs require strategic policy choices in order to make them effective as building blocks for sustainable regional development. But the nature of policy intervention of course very much depends on which type of industrial clusters, either emerging or existing, holds the greatest potential from the integrated environmental and economic stand point.

It is difficult for public policy to create new EIC clusters deliberately. Instead, policy makers should promote and maintain the enabling conditions. Public policy measures that can support EIC could originate from three main policy streams: industrial policy that inspires innovation and technology development, environmental policy that focuses on resource conservation and emission reduction, and regional development policy that seeks to stimulate necessary infrastructure investment.

Current institutional frameworks and policies that favor the development of EICs in most of the Asian countries are fragmented and uncoordinated, not as result of negligence, but due to inconsistent understanding on the presence and strategic importance of EICs. Changes in policy orientation are essential to promote the EIC as a new model for sustainable regional development. Joint efforts that cut across three main policy streams that favor co-operative, multi-stakeholder and often location specific approaches are needed to unleash the full potentials of eco-industrial clusters.



## *more Conference Reports*

### **Asia-Pacific EIP Expert Network**

**Chih C. Chao** (ccchao@mail.ncku.edu.tw)

In response to an urgent call for greenhouse gas reduction and green productivity enhancement, the Taiwan government and industry partners have been actively promoting and implementing eco-industrial parks (EIP). One action being taken is to gather international EIP experts and share their expertise to build an effective EIP platform and hence green supply chains. This has inspired the formation of an Asia-Pacific EIP Expert Network, dedicated to regional collaboration on research and application of EIP fundamentals, policy, indicators, material and energy flow analysis, value-added resource recycling, management and administration.

This network arose from the 2010 International Workshop on Eco-Industrial Parks held in Taipei, during 24~26 May. Close to 200 professionals, researchers, executives and officers participated in this event, where the experiences of Taiwan, Japan, Korea, China, Thailand, Philippines, and USA in various stages of EIP development and implementation were presented and discussed. The topical subjects included: ecotown system towards low carbon regions, emergence of mutualism, eco-efficiency evaluation, cleaner production, as well as EIP development in new and existing industrial zones. Following technical tours to four EIP champion companies in Taoyuan, a roundtable discussion was conducted, leading to a consensus that more needs to be done to continue the dialogue and exchange, with the intention of cooperating on regional issues which are of interest to participat-

ing economies. The results may also be presented to concerned governments as a policy and program advice, to facilitate the incorporation of new concepts, methods and skills.

This new network is being led by a core group of professionals, including several ISIE Members: T. Fujita (Japan), S. Suh (USA/Korea), A. Chiu (Philippines), Geng Yong (China), P. C. Chiang (Taiwan), K. Charmondusit (Thailand), Wang Chengwen (China), and C. C. Chao (Taiwan). This group aims to serve as a platform to coordinate the information dissemination, research cooperation, and policy and program advice, on EIP related matters within the Asia-Pacific region.



## *more Conference Reports*

### **International Symposium on Sustainable Systems and Technology**

**Rachael Nealer** (rnealer@andrew.cmu.edu)


The 2010 Institute of Electrical and Electronic Engineers (IEEE) International Symposium on Sustainable Systems and Technology (ISSST) was held 17-19 May in Washington, DC. This conference was formerly known as the International Symposium on Electronics and the Environment. ISSST was formed to promote the growing collaboration between sustainability and electronics. Conference organizers included ISIE members Brad Allenby of Arizona State University, Scott Matthews of Carnegie Mellon University, Eric Masanet of Lawrence Berkeley National Lab, and Arpad Horvath from University of California, Berkeley.

Approximately 80 presentations and 20 posters were presented. The audience was predominately from academia, although there were also members of the electronics industry. There was a strong theme of sustainability and Information and Communications Technology. Other presentation and paper topics included Green Manufacturing; Nanotechnology; Carbon Footprint of Information and Communication Technology; Energy Analysis; Analysis of Reuse and Remanufacturing; and Materials and Sustainability. Awards were given to the top three student papers and top three student posters submitted.

Highlights of the conference were the keynote speaker and a free tutorial session on an electronic product impact tool. The keynote presentation was given by Joel Garreau, a professor of Law, Culture, and Values from Arizona State University

and author of “Radical Evolution: The Promise and Peril of Enhancing Our Minds, Our Bodies – and What It Means to Be Human.” He spoke of rapid technological growth over recent years and the associated societal and environmental implications. There free tutorial session on the Electronic Product Environmental Assessment Tool was given by members of the US Environmental Protection Agency.

The second year of the conference was successful in continuing to explore the interface between the future of electronics and sustainability. For information on next year’s conference go to <http://www.ieee-issst.org/>



**Always dream and shoot higher than you know you can do. Don't bother just to be better than your contemporaries or predecessors. Try to be better than yourself.**

—William Faulkner

## Conference/Exhibition Listings

2nd International Conference Management of  
Technology - Step to Sustainable Production  
2-4 June, Rovinj, Croatia

Footprint Forum 2010  
7-12 June 2010, Colle val d'Elsa

Plant and Waste Recycling Show  
8-10 June 2010, Paignton Devon

The 3rd International Conference on Eco-Efficiency  
9-11 June 2010, Egmond aan Zee, The  
Netherlands

CA Higher Education Sustainability Conference  
20-23 June 2010, Los Angeles, USA

18th International Input-Output Conference  
20-25 June 2010, Sydney, Australia

Summer Congress 2010  
22-25 June 2010, Sudbury, Canada

ZeroWIN Vision Conference  
6 July 2010, Southampton, UK

***Gordon Research Conference on  
Industrial Ecology  
11-16 July 2010, New Hampshire, US***

5th Annual International Conference on  
Environmental Science and Technology  
12-16 July 2010, Houston, US

IT APN Conference on Experiments, System  
Innovation and Sustainability Transitions in Asia  
15-17 July 2010, Chiang Mai, Thailand

Sustainable Planning Challenges  
3-6 August 2010, Guangzhou, China

Sustainable Landfilling  
23-25 September 2010, Vienna, Austria

Sustainability in Design: LeNS Conference

29 September - 1 October, Bangalore, India

European Roundtable on Sustainable  
Consumption and Production  
25-28 October 2010, Delft, The Netherlands

**ISIE Asia-Pacific and ISIE MFA ConAccount  
7-9 November 2010, Tokyo, Japan**

European Roundtable on Sustainable  
Consumption and Production  
25-28 October 2010, Delft, The Netherlands

11th Global Conference on Environmental  
Taxation Issues  
3-5 November 2010, Bangkok, Thailand

3rd International Symposium on Energy from  
Biomass and Waste  
8-11 November 2010, Venice, Italy

Ester Boserup Conference 2010  
15-17 November 2010, Vienna, Austria

CUTE Final Conference  
17-18 November 2010, Hamburg, Germany

Linnaeus Eco-Tech '10  
22-24 November 2010, Kalmar, Sweden



Environmental engineering positions, Becton Dickinson; New Jersey, USA  
LCA Research Associates, Applied Sustainability Center, Arkansas, USA  
Social Scientist, Environmental Protection Agency, USA  
Associate Researcher, Institute for Global Environmental Strategies, Japan  
Postdoc ecosystem services, University of Bayreuth, Germany  
Postdoc biofuel supply chain, Environmental Protection Agency, Ohio, USA

For details on these positions and additional positions, see the Job Posting section of the ISIE website: <http://www.is4ie.org>

## International Society for Industrial Ecology

The International Society of Industrial Ecology (ISIE) promotes industrial ecology as a way of finding innovative solutions to complicated environmental problems and facilitates communication among scientists, engineers, policy makers, managers and others who are interested in how environmental concerns and economic activities can be better integrated.

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### ISIE News Schedule

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Send submissions to the appropriate editor.

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