

## What's New In ISIE?

### ISIE 2007 Is Here!

The ISIE 2007 conference is just days away. The Program is set and highlights the four main themes of Sustainable Social Metabolism, Infrastructure for Sustainable Cities, IE for Developing Countries, and Transitions to Sustainability in a Complex World. The schedule features the following plenary talks:

- Sustainable Social Metabolism, Marina Fischer-Kowalski
- Infrastructure for Sustainable Cities, Aromar Revi
- IE for Developing Countries, Yi Quian
- Transitions to Sustainability in a Complex World, Henry Regier

There are numerous parallel session covering diverse topics. Among these are:

- Uncertainty in LCA
- Integrated Sustainability Assessment Models
- Eco-Industrial Development in Asia
- Agriculture, Forestry and Land Use
- Urban Energy Systems
- Complex Systems
- Policy Applications of IE

Additionally, there will be two poster sessions featuring even more research on relevant IE topics.



*The University of Toronto will host the 2007 ISIE gathering 17-20 June.*

The meeting offers opportunities for informal interaction with significant breaks in the meeting schedule as well as a barbecue on the opening evening and a boat cruise the second night.

To see the full program, go to: <http://www.isie.ca>

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### *Inside....*

B. Karn with a "nano" report

R. Ramaswamy with ROI news

Commentary from E. Hertwich

JIE articles now previewed online

Website reviews from K. Reinhardt and J. Droscholl

## Conference Reports

*Editor's Note: A brief note about this conference appeared in the December 2006 ISIE News. Barb Karn now follows up with a more in-depth look at the conference report.*

### **LCA meets Nanotechnology (Part II)**

**Barb Karn** (karn.barbara@epa.gov)

*Nanotechnology and Life Cycle Assessment: A Systems Approach to Nanotechnology and the Environment*, the final report from the October 2006 workshop held by the Woodrow Wilson International Center for Scholars and the European Commission (with help from EPA and ISIE), was released in March 2007.

Nanotechnology involves the use and manipulation of materials with one dimension ranging in size roughly from 1-100 nm. In this size range,

***It is hard to imagine an industry that will not be affected by nanoscale science discoveries and the application of nanotechnology.***

the optical, electrical, magnetic, and thermal properties of materials can vary with their size. For this reason, industries see a huge potential for better products, particularly in the areas of medicine and medical devices, electronics and information technologies, chemicals and materials, coatings, energy, and transportation. It is hard to imagine an industry that will not be affected by nanoscale science discoveries and the application of nanotechnology. The industrial ecology community has a limitless opportunity to apply its intellectual capacity to examining these new industrial applications. More than 450 consumer products that identify themselves with nanomaterials are now on the market, and the number of products continues to increase at an accelerating pace.

The LCA and Nano workshop involved 25 experts who discussed whether existing LCA tools and methods are adequate to use on nanotechnology. In addition to providing an assessment tool

to understand, evaluate and manage environmental and health effects, LCA can also be used to compare the environmental performance of existing products with new, nano-enabled products. The workshop report summarizes LCA tools and answers three questions regarding LCA and nanotechnology:

1. Why should LCA be performed on nanomaterials and nanoproducts?
2. Who is likely to perform an LCA on nanomaterials and nanoproducts?
3. What are the benefits of conducting an LCA for different stakeholders?

The report reviews the current literature addressing nanotechnology and LCA and then gives a detailed analysis of how the ISO 14040 and 14044 frameworks can be applied to nanomaterials and

nanoproducts. The report further analyzes how Life Cycle Thinking can broaden the concepts of LCA in order to begin to examine the social and economic as well as the environmental aspects of nanotechnology.

Conclusions are divided into 10 topics. A few selected conclusions state:

- "Nanotechnology is an enabling technology with applications in many industrial sectors. There are many nanoproducts, all with their specific characteristics as to composition and use pattern. There is therefore no generic LCA of nanomaterials, like there is no generic LCA of chemicals."
- "The ISO-framework for LCA is fully suitable to nanomaterials and nanoproducts even if data regarding the elementary flows and impacts might be uncertain and scarce."

*continued on page 3*

*Nanotechnology continued*

--"The main problem with LCA of nanomaterials and nanoproducts is the lack of data and understanding in certain areas"—uncertainty and rapid production of scientific data is needed; confidentiality in industry prevents some data from being released; assessment of toxic impacts of nanoproducts is lacking.

--"In the absence of data, a (five-step Life Cycle Thinking) screening approach was discussed."

--"Research efforts are needed to fully assess potential risks and environmental impacts of nanoproducts and materials (not just related to LCA)...For LCA, a case-study approach was proposed."

The recommendations are set out in four areas:

1. Case-studies/prioritizing efforts: significantly enhance knowledge on environmental impacts through further research. Adopt a case-study approach.
2. LCA studies and presentations of results: Do not wait for near-perfect data, but clearly state uncertainties and assumptions in studies; work across scientific boundaries.

3. Approaches: critical and expert reviews are needed to ensure credibility. Use an approach like Product Category Rules in ISO to establish ruled for LCA in nanomaterials and products.

4. Actions from stakeholders: Government, academia, industry, and NGO/consumer associations can all support the application and use of LCA to nanomaterials and products through actions appropriate to their organizations.

This report represents a comprehensive first step to promoting and enabling the use of industrial ecology and LCA in a nascent enabling-technology. New technologies do not come along very often. There is now a unique opportunity for industrial ecologists to help the environment by directing their knowledge down a new path—to nanotechnology.

To see the full report, go to:

[http://www.nanotechproject.org/file\\_download/168](http://www.nanotechproject.org/file_download/168)

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## JIE News

### Online Preview for JIE articles

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

The Journal of Industrial Ecology (JIE) has started posting articles on its website in advance of the release of the print version. You can find the "Early Access" feature by going to the JIE home page <<http://www.mitpressjournals.org/jie>> and scrolling to the table of contents in the center of the page. There is a link to the "Early Access" listing at the top of the table of contents (just below the tabs for "Current", "All Issues" and "Forthcoming" and just above the link for the most recent issue).

Articles will be posted as uncorrected proofs when they become available from the typesetter. When the relevant print issue is released, all the articles will be moved to the conventional listing in the table of contents.

The JIE is MIT Press's "guinea pig" for this service, so your feedback is welcome.

## ISIE Member News

**New IE-Relevant Books**

Fischer-Kowalski, M. and H. Haberl (eds.) 2007. *Socioecological Transitions ad Global Change: Trajectories of Social Metabolism and Land use*. Edward Elgar Publishers.

This new book analyzes fundamental changes in society-nature interaction, specifically related to the socioeconomic use of materials, energy and land. The volume presents a number of case studies addressing transitions from an agrarian to an industrial socioecological regime, analyzed within the materials and energy flow accounting framework. It is argued that by concentrating on the biophysical dimensions of change in the course of industrialization, social development issues can be explicitly linked to changes in the natural environment.

For details go to:

[http://www.e-elgar.co.uk/bookentry\\_main.lasso?id=12748](http://www.e-elgar.co.uk/bookentry_main.lasso?id=12748)

Isenmann, R. and M. von Hauff (eds.) 2007. *Industrial Ecology: Mit Ökologie zukunftsorientiert wirtschaften*. Elsevier.

Leaders in industrial ecology research from Germany, Austria and Switzerland give an introduction to IE, including conceptual fundamentals, central fields of activity, main instruments, and best practice examples. Many contributors will be familiar to the ISIE community. This is a German language publication.

For details go to:

<http://www.elsevier.de/artikel/1046182>

**MFA Software Available**

**Helmut Rechberger** ([helmut.rechberger@tuwien.ac.at](mailto:helmut.rechberger@tuwien.ac.at))

Together with professional software engineers, Helmut Rechberger and Oliver Cencic from Vienna University of Technology have developed a new software for MFA in a two-year project. STAN (short for subSTance flow ANalysis) is freeware and supports graphical modelling of material flow systems, displaying mass flows as Sankey arrows, calculation of unknown quantities and consideration of data uncertainties. STAN is available in German and English, both versions offering context sensitive help.

More information and free download are available at:

<http://www.iwa.tuwien.ac.at>

**ROI Offers Water Study**

**Ramesh Ramaswamy**  
(ramesh.ramaswamy@roi-online.org)

The Resource Optimization Initiative (ROI) has prepared a Resource Utilization Map (RUM) for water in Bangalore to understand who uses water, how much and for what.

The figure illustrates a generic RUM showing use from sectors and sub-sectors related to human living, agriculture, and industry/infrastructure. Such data could immediately indicate points at which recycling would be useful and viable. Often the data presented in this manner leads to policy directions that appear obvious after the study, but were never thought of.

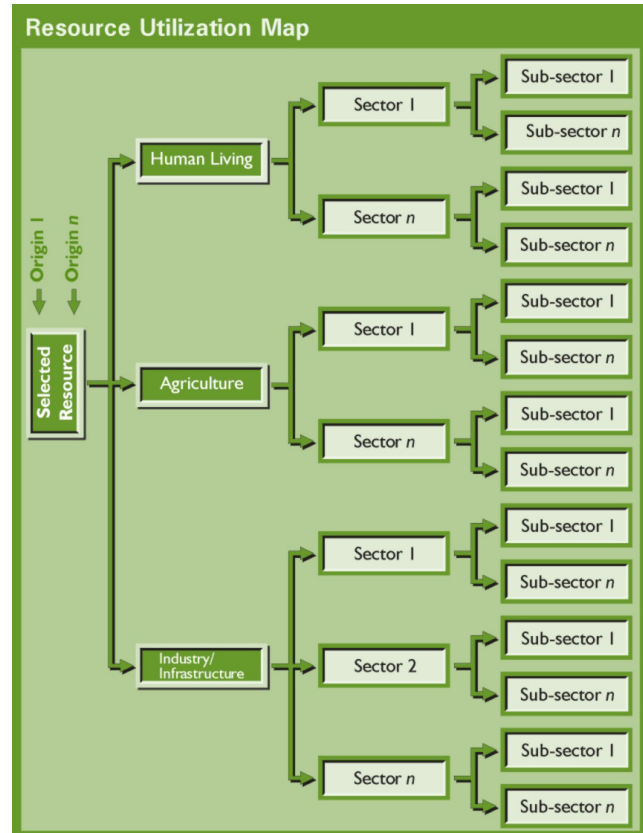
In Bangalore the official conservation approach had been to persuade people to use less water in their homes. The study showed, however, that the water consumption in homes is lower than the norm and that the greatest scope for water conservation was to arrest pipe leakage. Also, the town planners had never thought of directing the growth of the city towards the source of water. In fact the city is growing in a direction away from the water source. The data showing the conspicuous consumption of energy to pump water to the city could prompt the authorities to rethink their plans.

Similar studies could be useful for other resources, such as the use of electrical energy in Bangkok or the use of coal in the whole of China. Such an analysis is particularly relevant in developing countries, where many resources are provided free. For example, in many cities water supply is not metered.

The summary results from the Bangalore study are available at:

<http://www.roi-online.org/paperdownload.asp>

<http://www.is4ie.org>



Source: Erkman & Ramaswamy, *Applied Industrial Ecology- A New Platform for Planning Sustainable Societies*

**ROI Working Papers**

A working paper on bio-gas is available on the ROI web site. The paper provides considerable data about bio-gas and could be useful to researchers working on alternate energy sources.

Students and researchers are encouraged to submit useful papers to the ROI. The ROI web site gets up to 17,500 hits every month and even if papers have not been published in academic journals, the information could be useful to researchers in other parts of the world.

To submit your work, go to:

<http://www.roi-online.org/paperdownload.asp>

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## Web Reviews

### **Redefining Progress**—<http://www.rprogress.org>

**Kevin Reinhardt** (Kevin.Reinhardt@dal.ca)

Redefining Progress (RP) is a leading U.S policy institute that develops solutions to help people, protect the environment, and increase economic growth. In order to facilitate this shift toward sustainability RP works with grassroots communities, labor unions, policymakers, academics, and businesses. With extensive information on sustainability indicators, current issues, publications and specific projects RP is a comprehensive and textured site. Though its target audience is the U.S., its information is relevant and available to anyone interested. The website's most appealing feature is its work on footprint analysis; with links to calculate individual and office footprints; also a world footprint study and various footprint methodologies are presented. Site organization seems straightforward from its simple layout, but navigation is jumbled by many items re-used under different subjects. The site is frequently updated with recent news and relevant information.

### **Environmental Protection Agency (EPA) Durable Goods Calculator**—

[http://epa.gov/climatechange/wycd/waste/calculators/DGC\\_home.html](http://epa.gov/climatechange/wycd/waste/calculators/DGC_home.html)

**John Drosoll** (Jh232845@dal.ca)

The United States Environmental Protection Agency (EPA) created this site to facilitate understanding of the greenhouse gas emissions associated with different methods of disposal for fourteen durable goods. Its intended audience includes individuals and industry actors seeking to understand the emission implications that result from recycling, combustion, or landfill disposal of household solid goods. The actual Durable Goods Calculator (DGC) is one of a suite of environmental impact categories made available through the EPA Climate Change website; the DGC itself is a free, downloadable Excel spreadsheet. The DGC website is clean and easily understood, with clear directions and numerous links to other government climate change websites. In a welcome feature for a government website, contact information for those seeking help is prominently displayed at the bottom of the page.

<http://?>

What is your favorite site? Send us a summary.

*welcome*

*foon ying*

*bienvenidos*

*dobro pozhalovat*

*willkommen*

*yo koso*

## New ISIE Members

Naoya Abe, Japan

William Adams, USA

Ning Ai, USA

Toshiya Aramaki, Japan

Peter Arbuckle, USA

Pieter Beers, Netherlands

Theodore Besson, Switzerland

Albena Bossilkov, Australia

Michael Brady, USA

Miguel Brandao, UK

Matthew Branham, USA

Sabrina Brulot, France

Jing Cao, USA

James Chamberlain, USA

Muhan Cheng USA

Matthew Chester, UK

Jun-Ki Choi, USA

Brett Cohen, South Africa

Nina Eisenmenger, Austria

Ackom Emmanuel, Canada

Joshua Engel-Yan, Canada

Renaud Falgas Switzerland

Scott Flemming, Canada

Bjorn Frostell, Sweden

Micahael Gerst, USA

Chris Gwaltney, USA

Tiina Harma, Finland

Jaime Hernandez, USA

Courtney Higgins, USA

Jenna Hill, USA

Chia-Wei Hsu, Taiwan

Yu Shan Huang, USA

Satoshi Ishii, Japan

Guillaume Junqua, Canada

Elif Kongar, USA

Daniel Lang, Switzerland

Michael Lepech, USA

Xiaozhen Liu, Singapore

Aweewan Mangmeechai, USA

Jaspal Marwah, Canada

Colin McMillan, USA

Ahmad Mohammed, Malaysia

Richard Mohan, UK

Stephan Moll, Germany

David Morgan, UK

Jun Nakatani, Japan

Masahiro Oguchi, Japan

Jordi Oliver Sola, Spain

Emilie Ouellet, Canada

Debapratim Pandit, Japan

Sonja Plesset, USA

Jason Rauch, USA

Corrine Reich-Weiser, USA

Laura Saikku, Finland

Dalia Sakr, Egypt

Thomas Seager, USA

Soheil Shayegh, IRAN

Deepak Sivaraman, USA

Bertha Sopha, Norway

Theodoros Staikos, UK

Julia Steinberger, Austria

Laura Talens Peiro, Spain

Amie Therrien, Canada

Graham Turner, Australia

Nandan Ukidwe, USA

Kees Vringer, Netherlands

Xi Wang, USA

Christopher Weber, USA

Peter Wells, UK

Ramsey Wright, Canada

Kazuyo Yokoyama, Japan

Han Zhang, USA

Junming Zhu, China

Where the **willingness** is great,  
the *difficulties* cannot be great.

*Nicolas Machiavelli*

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## Student Chapter

### **ISIE 2007 Student Activities**

**Troy Hawkins** (trh@andrew.cmu.edu)

Interested in furthering your career in the field of industrial ecology? Then don't miss the Student Development Session at the ISIE conference in Toronto. We will meet on Sunday, June 17 from 1:00-2:00.

This session will feature a panel of professionals working in various aspects of industrial ecology. Academic, business, and non-governmental organizations are represented. Panel members will discuss their career paths and provide guidance based on their experiences on in the diverse field of industrial ecology. Advice on finding funding for your research and suggestions for where to look for employment after graduation will also be provided. Bring your questions to ask the panel during an open discussion time.

Panel members include:

- Brad Allenby, Arizona State University
- Diana Bauer, U.S. Environmental Protection Agency
- Robert Lucacher, Mervyns LLC
- Ramesh Ramaswamy, Resource Optimization Initiative

Other student activities include:

*Social Gathering*

Monday, June 18, 6.30 pm

Meet after the BBQ dinner to get to know your colleagues.

*Student Chapter Meeting*

Tuesday, June 19, 1-2 pm

Meet chapter members in our annual chapter meeting. We will give updates about ISIE and the chapter, we will be introducing the current officers, take nominations for next year's officers, and provide an opportunity to network!

*Closing Ceremony and Award Presentation*

Wednesday, June 20, 3 pm

Join us for the presentation of the Society award and a presentation by the student poster competition winner.

*Student Poster Competition*

For more information visit:

<http://www.isiestudents.com/Posters2007.htm>



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## Commentary

### ISIE—An Offline Community?

**Edgar Hertwich** (edgar.hertwich@ntnu.no)

While Facebook (.com, that is) is all the rage, sociologists are studying second life, and professionals are getting linked in, the industrial ecology community has not yet organized itself in cyberspace (sorry for the old fashioned term). The industrial ecology discussion list (<http://www.jiscmail.ac.uk/lists/industrial-ecology.html>) has virtually no discussions going, just a few announcements. The ISIE website lacks blogs, comments and discussions. The Journal's electronic letters section is little used. So, is ISIE just an outdated bunch of old-fashioned guys not tuned in? Clearly, there are costs and benefits to creating online communities. Do we need such electronic forums?

There are several important advantages to using the capabilities of the web and listservs. Clearly, the communication among us could be improved. We would all benefit from knowing more about each others work, and other noteworthy things like open positions and events. We could benefit from discussing certain issues more openly, such as how to expand in Asia and where to have the next conference. Our students could ask more

informal questions, as students do on PRe's LCA discussion list (<http://www.pre.nl/discussion/default.htm>), which has become a hub of the LCA community. We could also utilize the web in creating a flow-of-knowledge, i.e. a transdisciplinary synthesis on specific issues, as the SCORE! network is currently attempting. Most of the benefits I can see now could flow from a fairly low-cost activity such as a listserv.

Some of the benefit could be increased visibility, but then we would need to produce something that is attractive for visitors from outside ISIE. Some of us are involved with more broadly oriented efforts, such as the Encyclopedia of the Earth. Most of us would be adverse to joining Facebook, not least because of the time costs involved.

I think that our community would benefit most from actively participating on an industrial ecology discussion list. In addition, explaining our topics to the world is clearly important, and we should make an effort to do so. I am skeptical about more involved efforts to get organized on the web, but maybe videoconferencing and electronic conferences/journal could be of interest. Should we have a chat about that? What is your channel?

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## Interested?

### \$100,000 Prize for Design Competition

*Editors Note: This information was drawn from a PRNewswire story.*

Premier Farnell plc, an electronic component distributor, has launched an international design competition called 'Live Edge' - Electronic Design for the Global Environment.

The competition calls for innovative designs that utilize electronic components and have a positive impact on the environment, for example by

increasing energy efficiency or reducing carbon emissions.

The winner will receive \$50,000 as well as approximately \$50,000 in support funds to move the design toward production.

Contestants must register by October 31, and entries are due November 30, 2007. The winner will be announced in January 2008.

For the full details go to:  
<http://www.live-edge.com/info>

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## Conference/Exhibition Listings

Second Environmental Studies Summit  
7-9 June 2007, Syracuse, USA

LCE2007  
11-13 June 2007, Waseda University, Japan

14th CIRP Life Cycle Engineering 2007  
11-13 June 2007, Tokyo, Japan

### **ISIE 2007 17-20 June 2007, Toronto, Canada**

International Symposium on Society and  
Resource Management  
17-21 June 2007, Park City, USA

13th International Interdisciplinary Conference on  
the Environment  
30 June-3 July 2007, Portland, USA

5th International Conference on Design and  
Manufacture for Sustainable Development  
10-11 July 2007, Loughborough, UK

National Energy from Waste Conference 2007  
18-20 July 2007, Sydney, Australia

3rd International Conference on Environmental  
Science and Technology  
6-9 August 2007, Houston, USA

International Conference on Life Cycle  
Management  
27-29 August 2007, Zurich, Switzerland

Bioenergy 2007: International Bioenergy  
Conference and Exhibition  
3-6 September 2007, Jyvaskyla, Finland

World Congress on Recovery of Materials and  
Energy for Resource Efficiency  
3-5 September 2007, Davos, Switzerland

Globalizing Lifestyles between McDonaldization  
and Sustainability Perspectives: The Case of the  
New Middle Classes  
4-5 October 2007, Bremen, Germany

International Trade Fair on Environmental  
Protection  
27-30 October 2007, Hong Kong

Sustainable Innovation 2007  
29-30 October 2007, Surrey, UK

12th World Lakes Conference  
28 October-2 November 2007, Jaipur, India

The 20th World Energy Congress - Rome 2007  
11-15 November 2007, Rome, Italy

2nd National Landfill & Transfer Stations  
Conference  
19-21 November 2007, Melbourne, Australia



*Are you planning a **conference?**  
Post dates on the **ISIE website!***

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IE Jobs

*To check on job listings or to post a job, go to the ISIE website  
<http://www.is4ie.org>*

Full Professor or Associate Professor in Civil and Environmental Engineering, Hokkaido University, Japan

Director of the Research Institute for Environment, Energy, and Economics, Appalachian State University, USA

Wildlife Manager / Ecologist, Birdstrike Control Program, USA



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**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.

**Officers**

- President—Marina Fischer-Kowalski
- President-Elect—Roland Clift
- Treasurer—Joule Bergerson
- Secretary—Claudia Binder

**Council**

- Edgar Hertwich                      Matthias Ruth
- Yuichi Moriguchi                  Thomas Theis
- Ramesh Ramaswamy              Valerie Thomas

**Student Liaison**—Vered Doctori Blass

**Nominating Committee**

- Diana Bauer                          Paulo Ferrao
- Jun Bi                                    Ned Gordon
- Tracy Casavant                      Sinichiro Nakamura

**Executive Director**—John Ehrenfeld

**Editor**, *Journal of Industrial Ecology*—Reid Lifset

<http://www.is4ie.org>

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- Troy Hawkins, Student Chapter, [trh@andrew.cmu.edu](mailto:trh@andrew.cmu.edu)

**ISIE News Schedule**

<u>Publication Date</u>	<u>Submission Deadline</u>
Sep 2007 v7 n3	17 August 2007
Dec 2007 v7 n4	16 November 2007

Send submissions to the appropriate editor.

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