ISIE Summer 2103 Newsletter

Dear ISIE Members,

The Summer is almost over, but this is perfect timing for our new issue of the ISIE newsletter. We have a very full newsletter this issue with conference reports, section news, book announcements, jobs and more. We have also included a special report from Executive Director Roland Clift on the recent ISIE 2013 conference in Ulsan South Korea. We had an impressive turnout and a very successful program. We hope that, if you attended, you were inspire and felt connected to the Industrial Ecology community. If you were not able to make it, you will have a chance to see it for yourself in 2015 in Surrey, UK. Have a great rest of the summer and a great new academic year.

All the best,
Melanie Quigley and Vered Blass

From ISIE President Marian Chertow

Although the planning for the meeting was sometimes complicated by many factors, the execution was brilliant and I want to thank and congratulate my friend and colleague, Conference Chair Hung-Suck Park.
I've learned in life that you need to make your

Dear all:

As the summer comes to a close, I continue to think about our 7th Biennial Conference. I think everyone who attended ISIE 2013 would agree that it it felt great to be an industrial ecologist in Ulsan in June.

The city made us feel so welcome with banners announcing our conference everywhere, the mayor spent a generous amount of time with us and we learned how much he shared our goals for economy in harmony with environment, we had the lovely people-friendly facilities of the University of Ulsan that brought us together spatially, and we had an intimate chance to build community by talking about our society and showcasing our accomplishments through plenary sessions, orals, posters, and planned and spontaneous social occasions.

own magic, or at least help a lot.

The collective magic I find over and over again in ISIE is that we are both a small and also a global community. We don't need thousands of people at meetings to show our might and the social and scholarly mobility is impressive among ranks, nations, languages, and topics.

Students enjoy our meetings as much as old profs and I am personally very gratified by the benefits of our global community when it is time to prepare grants, find the right post-doc, seek answers to timely questions, and have colleagues to visit wherever I go. I loved getting to meet and greet so many of you in Ulsan and it makes me look forward to the Gordon Conference in 2014, Surrey in 2015, and all of the large and small opportunities in their midst.

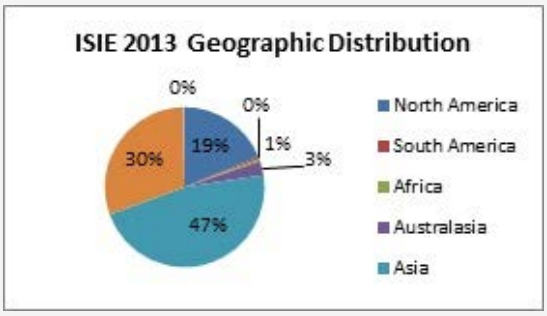
With much appreciation,

Marian

ISIE Conference 2013 Ulsan, South Korea

Most members will know that the Society's 7th biennial conference was held on 25 to 28 June 2013 at Ulsan, an industrial city in South Korea. This was the Society's first biennial conference held in Asia and the turnout was impressive: 407 delegates - almost as many as came to our previous conference at Berkeley CA in 2011. Over 35 countries were represented at the conference. The main conference was followed by a one-day Symposium on Industrial Ecology for Young Professionals, at which 50 attendees held workshops and networked with peers and senior

professionals in the field of industrial ecology.



The overall standard of the contributions was higher than ever - at least the discussions around the presentations and posters were vigorous! In addition to a plenary session on each day of the main conference, there were five parallel themed sessions. Our survey showed that delegates were pleased overall with the content of the sessions and the lively discussions.

Some felt that the presentations were too short and would have liked more time for discussion, but this is a difficult balance: longer presentations would mean more papers rejected or more parallel streams and it seems either of those changes would be unpopular. Some delegates commented that they would have liked more presentations on system-level innovation. That is indeed the way industrial ecology needs to develop but we can only have more of that kind of material if the papers are available - so work on it for 2015!

Although the program was busy, we found time to host workshops, meetings, and social gatherings particularly for the Society's Subject sections. Tours were arranged for delegates to visit industrial activities around Ulsan (the quality of the environment in and around such a heavily industrial city is truly impressive, and the Eco-Industrial Park is a feature of Ulsan) such as the paper mill, the ship-building yards and the Hyundai plant, along with a cultural tour to ancient petroglyphs and one of the earliest Buddhist centres in Korea. Our conference dinner was also supplemented by fascinating displays of Korean classical dance.

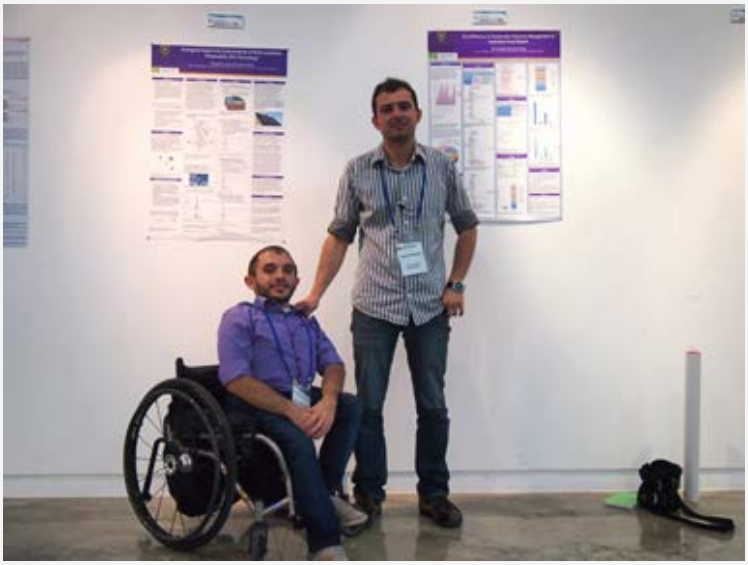
The Society is very grateful to Professor Hung-Suck Park of the University of Ulsan (a very engaging champion for his city – we think of him as "Eco-Industrial" Park) and his colleagues for their efforts in putting on such an excellent conference: stimulating and fun. They have set the bar high for the next conference in 2015.

Personal ISIE Experience of Mr. Benjamin Lang
(Graduate Student of Dr. Anthony Halog)

My experience attending ISIE in Ulsan, South Korea was both eye opening and informative. This was my first time at an academic conference and I was eager to hear many presentations, meet new people and if possible establish academic or professional connections within the community of industrial ecology. In addition, I was presenting a poster entitled “Ecological-based Life Cycle Analysis of Multi-crystalline Photovoltaic Technology” which was the culmination of a research project I had worked on at the University of Queensland.

There were over 500 participants in attendance with most coming from Europe, Asia, and North America although there were a small amount from Australia and Latin America. It appeared as though most attendees were making a contribution to the conference, be it a poster presentation or oral presentation. Additionally, most of the attendees had either completed their PhDs or were in the process of completing their dissertations. There were very few Masters students and even fewer undergraduates.

The first two days of the conference I spent attending numerous lectures and presentations from all facets of industrial ecology. Many of these presentations opened my mind to the complexities of industrial ecology, academic research, and the varying perspectives of people from different parts of the world. Others were difficult to follow; perhaps this was due to my lack of long-term experience within industrial ecology and my lack of experience with fields such as agriculture or mining. There were a few presentations that appeared to have little relevance at all to the field and not surprisingly these research projects lacked a verifiable case study to support the claims being made.



Murilo Pagotto and I with our posters at ISIE 2013

On the third day I presented my poster in a large conference hall with numerous other posters. During the two hours that my poster was displayed, many people approached with questions about the results of my project, the relevance to industrial ecology, or to say that they were impressed with the poster. Furthermore, my poster was entered into a competition.

During the two hours, multiple judges approached and asked challenging questions pertaining to my research and to test my overall knowledge of the subject matter. I found their questions stimulating, some even difficult to relate specifically to my work, but did my best to provide well-thought out answers. Some who approached my poster appeared genuinely interested in the project and explained their experience with either solar PV research or LCA methodology research. I exchanged business cards with these people and feel fortunate that we were able to connect.

By the fourth day I must admit that I was exhausted from attending so many presentations, and also due to a lack of sleep throughout the week, did not attend any of the oral presentations. Additionally, each night after the conference sessions, many of us gathered together in a local pub near the campus and socialized late into the night. These interactions were both fun and thought provoking and I feel fortunate to have met so many people from all over the world.

Overall my experience at ISIE was great. I learned a lot, met many unique people, made some connections, and got to experience life in South Korea. I'm glad that I was able to attend this conference and hopefully will have opportunities in the future to attend similar conferences around the world.

Personal ISIE Experience of Ms. Stefania Pizzirani

Stefania Pizzirani has been awarded the New Zealand Institute of Forestry Chavasse Travel Award. The award provides funding for national or international travel, and recognises forestry excellence and personal integrity.

The travel grant allowed Stefania to attend and present her PhD research at the 7th International Conference of the International Society for Industrial Ecology at the University of Ulsan in South Korea.

"My PhD research is focussed on exploring alternative forestry practices and wood-based products to help achieve Māori aspirations," Stefania said. "In order to do this effectively a technique called Life Cycle Sustainability Assessment (LCSA) will be utilised to review and analyse the environmental, economic, social and cultural impacts of these new forestry and wood product options. This research, therefore, will ultimately help Māori landowners explore 'what if' scenarios and make future forestry-related decisions.

"The integration of indigenous cultural values within the LCSA process will be one of the first of its kind. This research will also greatly contribute to the limited studies regarding the use of LCSA both as a decision-making tool and process, and as a technique to determine sustainable forestry practices and products."

ISIE 2015 – University of Surrey, Guildford, UK; July 7th to 10th: TAKING STOCK OF IE

As announced at the close of the Ulsan conference, the Society's next conference will be held at the University of Surrey - a campus University at the town of Guildford in the county of Surrey in the South East of England, about 50km (35 minutes by rail) from central London – see map. Transport to Guildford is easy, via Heathrow or Gatwick airport, by Eurostar train to London or, for a more leisurely journey, by ferry from St. Malo or Cherbourg to Portsmouth with a direct train from the ferry terminal to Guildford (one hour).

The Conference will follow what is now the Society's usual format, running from Tuesday (July 7) to Friday (July 10) with meetings before and following the main conference. The theme will be to "take stock" of what industrial ecology and the ISIE have achieved and to consider possible future pathways: plenary speakers and panels will give reviews – both retrospective and prospective – of different aspects of industrial ecology. The contributions will be published as a book, to set out the state-of-the-art in industrial ecology as an emergent area of study and practice.

Watch out for further details but put the date in your diary – it is definite!

ISIE Sections Update

Life Cycle Sustainability Assessment (LCSA) section update, Jeroen Guinée

During the ISIE biennial conference in Ulsan a meeting of the Life Cycle Sustainability Assessment (LCSA) section was held on Thursday 27 June from 7-8 PM with an informal dinner afterwards. Around 20 conference participants joint this meeting. Jeroen Guinée (preliminary chair-man of the LCSA section) presented an update of the sections' activities since its installation at the Berkeley conference two years ago.

After this presentation the main point discussed was how to set up a platform for virtual networking among members of the LCSA section, and possibly also among ISIE-LCSA section members and LCSA-interested people from other communities such as SETAC. A decision was taken to adopt Google+ as such a platform, similarly to the OSCP section. Two LCSA section members, Sheetal Gavankar and Stefania Pizzirani, proposed to just try and set-up such a Google+ platform and they will start inviting LCSA section members to join the platform soon.

After this great decision, the section went for an informal dinner and the pictures below show you how much fun we had during that event!

The Industrial Symbiosis Data Repository/ Primary Database Project

PROJECT ORGANIZER:
The Eco-Industrial Development Council (EIDC) Section of the International Society of Industrial Ecology

COLLABORATION PARTNERS:

COLLABORATION PARTNERS:

- The National Technical University of Athens, Greece
- The Royal Institute of Technology, Sweden
- Delft University of Technology, The Netherlands

PROJECT VISION

This project looks to collect and structure data relevant to industrial symbiosis into a central data store. Data such as worldwide industrial symbiosis case studies, available transformation technologies, key material properties, and usage guidelines are of interest. The project is focused on allowing for and enabling the construction of varied end-use applications for the research and facilitation of industrial symbiosis. While there are similar data collection efforts in effect elsewhere, this project aims to create a data 'primary', fundamental data store that may be utilized (and developed) community wide by a range of users.

INITIAL WORK

To begin with, work has commenced on

1. Creating a common namespace - matching material terminology and synonyms across available datasets such as LCI, waste, and case study sources
2. Expanding upon and standardizing the information available from IS case studies
3. Describing materials through their key properties (such as chemical constitution, calorific value, pH, etc)

POTENTIAL END USE APPLICATIONS

It is envisioned that several open or proprietary applications could be built upon the data repository. Applications such as:

- Web based matching tools
- Consultant tools for enabling strategic facilitation
- Plugins for popular web business platforms to actively promote new symbiosis
- Research tools for comparing symbiosis scenarios
- National potential analysis applications

For more on the project, its aims, objectives, working initiatives, and sample data see ISDATA.ORG

Section election results were announced at the Conference as well. Peter Lowitt, Guillaume Massard, Tsuyoshi Fujita, Shi Han, Jooyoung Park, Ines Costa, Robin Branson, Gemma Cervantes and Wouter Spekkink were elected to the board.

ISIE student chapter Hack-A-THon

The ISIE student chapter took a page out of the tech industry's playbook and hosted a Hack-A-Thon at this year's conference in Ulsan, South Korea. Hack-a-thons are events that bring tech innovators, programmers and entrepreneurs together in an intense multi-day workshop to pitch projects, develop applications, and start new businesses. The members of the ISIE student chapter are part of the do-gooding, smartphone-wielding, social media-saavy Millennial Generation. We wanted to bring hacker style blue sky thinking and rapid prototyping to craft novel uses of Information and Communication Technologies (ICT's) in Industrial Ecology.

In keeping with this year's ISIE Conference theme – "Applying IE Research towards Transitions" – the student

In keeping with this year's ISIE Conference theme – "Applying IE Research towards Transitions" – the student chapter hosted the Green Ad-Hoc-A-Thon. This prize competition invited members to develop compelling project ideas that would use ICT's to scale up the impact of Industrial Ecology concepts in the fields of research, education, business, or policy. The ISIE conference lent a wealth of ideas in hot topics such as sustainable urban systems, lifecycle sustainability assessment, and industrial symbiosis, just to name a few.

The Ad-Hoc-a-Thon kicked off with a group brainstorm on Thursday evening during the ISIE Conference. The fourth floor of the University of Ulsan's International Hall was abuzz with discussion and debate fueled by Korean energy drinks and shrimp-flavored snacks. Dr. Igor Nikolic (TU Delft) initiated the hack-a-thon with a brief presentation on What Complexity, Sustainability, and Hacking can teach Industrial Ecology. Following a very metaphysical debate on the meaning of "technology" and its relative benefits and harms to the human experience, the group dived into IE project brainstorming. Graham Aid (KTH Royal Institute of Technology), Valerie Moye (Yale), and Chris Davis (TU Delft) facilitated the ideation session.

A flurry of post-it notes decorated the tables with ideas ranging from creating a free online Industrial Ecology course to creating a Couchsurfing group for Industrial Ecologists! Reid Lifset's earlier call for ideas to modernize the Journal of Industrial Ecology's online platform also spurred a rush of ideas that infused tech and social media into IE research, publishing, and online academic communities. The full list of brainstorm ideas can be found below.

On Saturday, 7 teams pitched their hacks during the Third Symposium on Industrial Ecology for Young Professionals. Each team had 3 minutes to describe their projects: WHAT is the problem/issue addressed?; HOW does your hack solve the problem?; WHO is the user?; and WHY is your hack significant to the field of Industrial Ecology? We chose winners through popular vote, and the following teams walked away with Raspberry Pis and cash prizes!

1st Place "Grand Vision:" GAIA Saver

GAIA Saver is the very first Industrial Ecology based video game that aims to educate a broad range of audience about the principles of Industrial Ecology, particularly Industrial Symbiosis. Our inspiration came from computer and tablet based video games that involves resource distribution (Age of Empire), infrastructure planning (SimCity), and simulation (Plague Inc). During the game, the very brave GAIA Savers will need to smartly use resources and capitals to design industries that reach the optimal symbiotic relationships. They will compete with the Egocentrists and try to reduce waste and greenhouse gases emission at the lowest cost. There will be stochastic events such as natural disasters, wars, government subsidies, population and market shift etc. The core design of the game relies on feedback loops and balances based on current Industrial Ecology research. We hope to use the current Industrial Ecology Wikipedia created by Delft University of Technology as the knowledge backbone of the game.

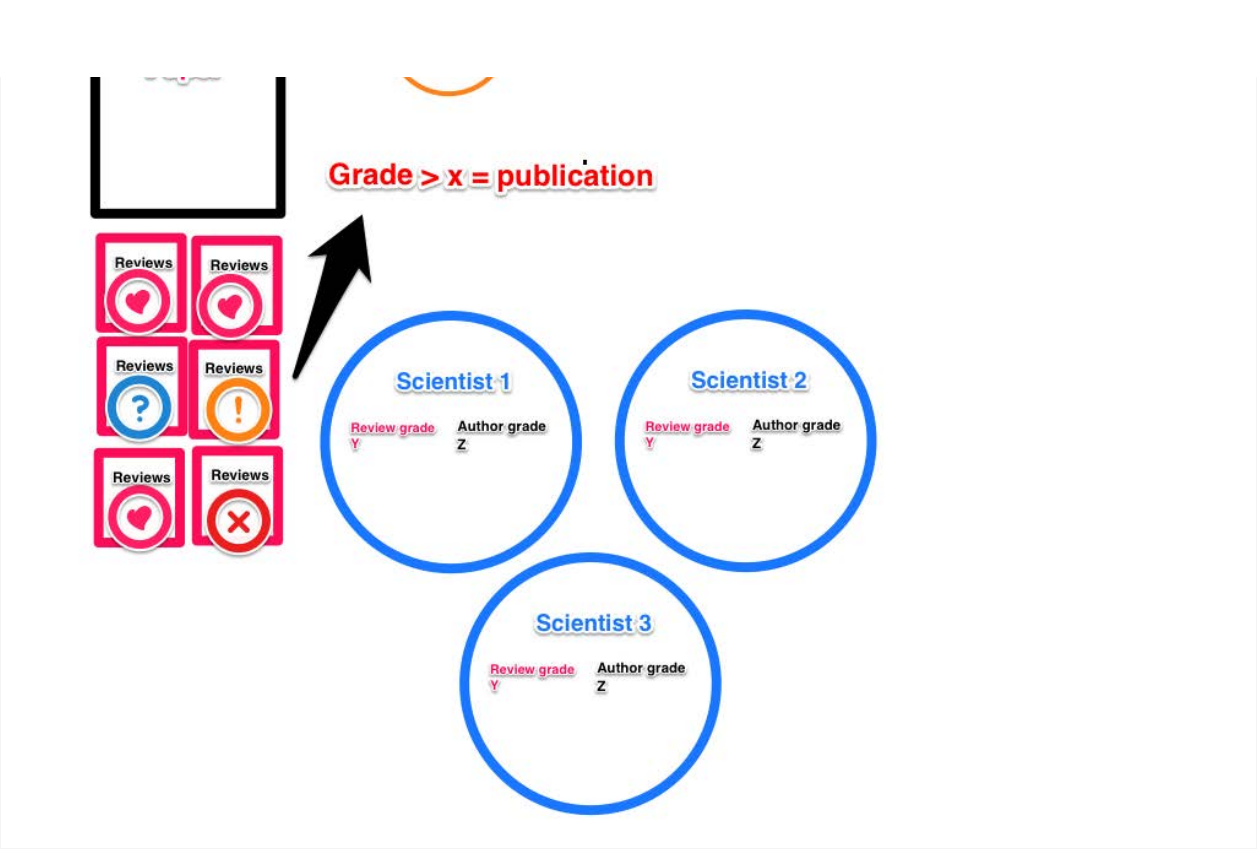
Team members: Lin Shi (Yale), Chris Davis (TU Delft), Guillaume Majeau-Bettez

Prezi presentation link:
http://prezi.com/arxyaxaht1pa/present/?auth_key=f1v70bd&follow=oe1aqy7gaymc&kw=present-arxyaxaht1pa&rc=ref-26237881

2nd Place "Super Dev:" Crowd Reviewed Journal

Crowd Reviewed Journal is a journal that would take advantage of crowd sourcing the review process through a social network of scientist. It would also take advantage of the "reputation" system of e-commerce by allowing authors and reviewers to increase their reputation through good quality contributions. This would make a transparent and more interactive platform for academic publications.

Team members: Jose Alfaro (Univ. of Michigan)



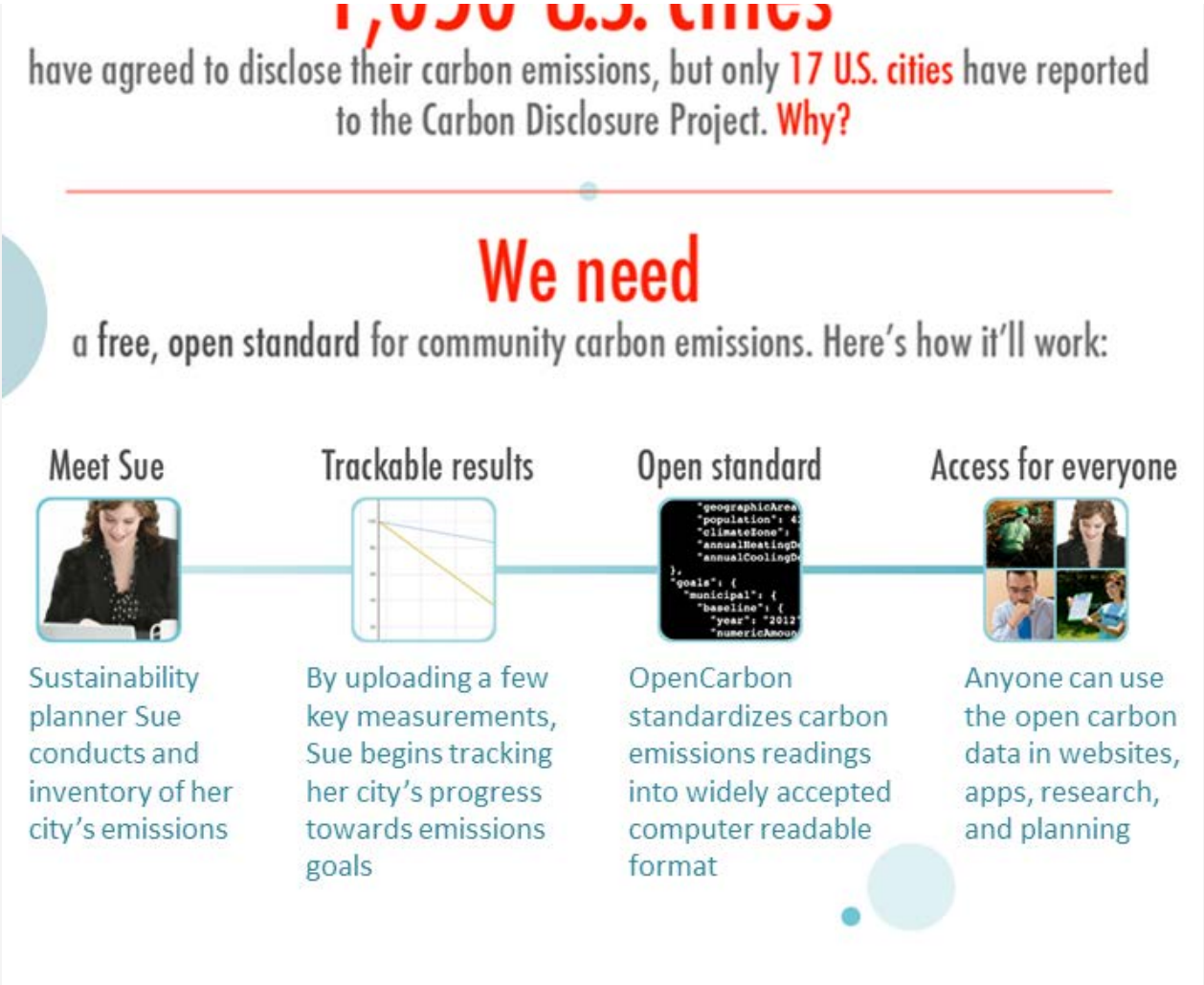
3rd Place "Great Hoc": OpenCarbon: Cities

OpenCarbon:Cities is a common, open set of technical standards for organizing and sharing community carbon emissions data. City's typically post their carbon emissions in a static PDF report on their government website. This makes gathering data from multiple cities in a standardized format incredibly difficult. Furthermore, this information cannot be easily incorporated into dynamic desktop and mobile apps, data visualizations, live databases or other modern applications. OpenCarbon will develop a platform to help local governments transform their carbon emissions data into a widely accepted machine readable format. This standardized data compiled from multiple cities will then be available to urban planners, web programmers, journalists, NGO's, climate scientists…anyone who has a need for digital carbon emissions data! Open data standards already abound in many urban fields, from real-time public transit tracking to restaurant health scores. It's time to bring city carbon reporting to the 21st century!

Team: Valerie Moye (Yale)

Web Link: http://www.opencarbon.org/

In the end, the Ad-Hoc-A-Thon brought an element of social entrepreneurship to the academic-oriented ISIE conference. In addition to a stockpile of great ideas to build on, we hope that all participants enjoyed the chance to find like-minded colleagues and forge future collaborations using Industrial Ecology to tackle some of our biggest sustainability challenges.



JIE News

New Editors

The JIE is pleased to announce that Shinichiro Nakamura of Wasada University has agreed to serve as an associate editor for input-output analysis (IOA). Scott Matthews who has served as an associate editor for both IOA and information & communications technology issues is going on sabbatical. Reinout Heijings, who had been serving as one of the JIE's book review editors, is leaving Leiden University and starting a position at VU University Amsterdam at the department of econometrics. Because of his change in focus, he has agreed to serve as statistical editor. His skills in statistics fill an important gap for the JIE. And finally, Charles Corbett of the University of California, Los Angeles, has agreed to serve as associate editor for supply chain management. The JIE is fortunate to be able to recruit such talent!

Deadlines for Revisions

The JIE has instituted a new policy regarding deadlines for revisions to provisionally accepted papers. Previously, there was no fixed deadline as it was felt that authors had strong incentives to move quickly and any delays would not change the workload experienced by the editors and editorial office. As part of a continuing effort to reduce time to publication, a deadline of one month is being implemented. This will be indicated in the guidelines for authors and in the emails sent to authors. It's anticipated that a short revision timeline for authors will make it easier for editors and reviewers to respond more quickly because they will be more familiar with the papers

that they must evaluate.

Changes have also been made to the JIE's internal editorial procedures to speed up the time to publication and they are beginning to show results. Additional changes are planned and will be described in the upcoming issues of the ISIE News.

Do you receive the JIE table of contents alerts? If not, be sure to sign up to receive these emails or RSS feeds so that you always have the latest in industrial ecology research.

IE News from around the world

First LCA workshop in Israel • 18-19 June 2013

The 2-day training was co-organized by the Ministry of Environmental Protection of Israel and the Cleaner Production Regional Activity Center of UNEP/MAP under the framework of the Horizon 2020 Capacity Building Mediterranean Environment Programme (H2020 CB/MEP – EU funded project) in collaboration with Tel Aviv University and the Manufacturers' Association of Israel. The main objective of the workshop was to increase the participants' understanding and knowledge on LCA data collection and databases and to exchange on local studies done in the country and promote the use of LCA.

The UNEP Life Cycle Initiative contributed to the training with the presentation of environmental LCA within a Life Cycle Sustainability Assessment framework. Furthermore, it introduced the work on LCA databases and proposed next steps for networking and facilitating the generation of new data in key sectors in the country.

About 60 participants from the Ministries and public sector, private sector, academia and civil society joined the workshop, learned from experts abroad, presented local case studies, and

discussed ways to move life cycle thinking forward in their country. Participants were carefully selected to represent a wide range of stakeholders thus creating a very fertile environment for an open and constructive discussion on the country's LCA strategy. Outcomes of the seminar include an agreement to setup a life cycle network in Israel and to host a 2nd national life cycle event in 2014.

For further details, please contact Ohad Carny or Vered Blass.

Metal Removal From Landfilled Ash

Anne K. Hewes, Ph.D
Environmental Manager at ecomaine, Portland, Maine U.S.A.
hewes@ecomaine.org

ecomaine is a US-based waste-to-energy power plant that has recently started recovering ferrous metals from incinerator ashes, with plans to further expand the metal recovery to non-ferrous and precious metals. ecomaine is the largest publicly-owned and –operated waste-to-energy power plant (WTE) in the United States, located in

is the largest publicly-owned and -operated waste-to-energy power plant (WTE) in the United States, located in Portland, Maine. It consists of a WTE, recycling plant, and landfill which are linked through their output and input flows, thus creating an integrated waste management system: the electricity generated by the WTE is used to run the State's only single-sort recycling center. The ashes produced in the WTE are deposited in the adjacent landfill/ashfill. ecomaine's integrated waste system adheres to a business plan that follows the Solid Waste Hierarchy – reduce, reuse, recycle, compost, waste-to-energy to lastly landfilling (State of Maine statute 38MRSA§2101 [2007]) (Roche & Hewes 2012). ecomaine also maintains certification to International Organization for Standardization (ISO) management systems: ISO 14001 (EMS) and OHSAS 18001 for environmental, health and safety at all three facilities: WTE, recycling and landfill/ashfill.

The facility started in 1978 as a landfill, which was closed in 1988 after it was decided to treat the region's wastes through a WTE. The WTE came online in 1988 and the residual combined ash was sent to the "ashfill" from then on. The incoming waste originates from municipal sources (45%), commercial sources (40%) and spot market (15%) and the plant is rated 14 megawatt facility producing over 105,000 MW hours of electricity per year. The current projected lifetime of the ashfill runs beyond 2036 due to the benefit of combustion which reduces raw municipal solid waste by 90% to ash.

In 2004, ferrous metal recovery from the ashes started. For the ashes deposited earlier (1988-2004), ecomaine has partnered with a salvage metal firm to re-work the ash and recover the ferrous metal fraction, a project called "ash metals mining." Since the beginning of its operation in November 2011 13,650 tons of ferrous metal has been recovered, corresponding to roughly 10% of the ash screened. As a result of the reworking of the ash, its density could be increased substantially, gaining about 1 cubic yard of air space for every two tons of metal removed, which will increase the capacity of the ashfill and therefore its future lifetime. In the future, ecomaine will also recover the non-ferrous metal fraction, and possibly the recovery of precious metals.

In conclusion, this is a successful example of enhanced resource recovery through innovative waste reuse at low capital costs by using off the shelf construction equipment (ie: backhoe, wheel loader, off road haul truck, gravel screening plant, and scrap recovery magnets) and few employees to staff the ash metals mining operation.

In closing, the benefit of mining the ash to recover the metal in the waste are three fold:

1. Earnings from selling the metal commodity
2. The "re-worked" ash possesses an increased geotechnical density for efficient compaction when replaced in the ashfill
3. Ecomaine is gaining valuable "air space" which means more space is available to place more ash into the ashfill into the future.

The ecomaine Board of Directors are concerned about future waste disposal practices and the need to efficiently manage their valuable landfill space. This was the impetus for the members of ecomaine's regional waste system to make a substantial investment in the future by constructing a waste-to-energy power plant in 1987.

Photo 1: Ash Metals Mining Operation at ecomaine's Ashfill

Photo 2: Aerial View of ecomaine’s Ashfill (the stack in the upper right corner is WTE)

Literature Cited:

Maine Legislature 2007, Statute Title 38, Section 2101 Solid Waste Management Hierarchy,

Hauck, R., LeRe, A., & Trytek, K., 2011 “Has the Time Come for More Publicly Operated WTE Facilities in the

Hauck, P., Locke, A. & Trytek, K., 2011 "Has the Time Come for More Publicly Operated WTE Facilities in the US?" Proceedings of ASME NAWTEC19-5416 Lancaster, PA

Roche, K.H. & Hewes, A.K. 2012. "ecomaine: An Integrated Waste Management" Proceedings of ASME NAWTEC20-7064 Portland, ME

Hewes, A.K. 2013 ecomaine 2012 Annual Solid Waste Incinerator Report to MDEP. 4-23-13

2013 IEEE Business Innovation and Technology Management Conference

After a successful conference in Taipei, Taiwan in January this year, the International Society for Business Innovation and Technology Management in partnership with IEEE China Council had another well-attended conference last May 17–19, 2013 at Tsinghua University in Beijing, China. The conference theme was "Sustainable Innovation and Green Leap."

In his welcome address, Prof. Anthony SF Chiu, President of ISBITM, stressed the importance of a

Green Leap in the Asia Pacific in addressing sustainability issues and its role in Green Growth and Green Economy. To this challenge, he urged the participants to pursue business innovation and technology management to support Green Leap.

For the plenary talks, Prof. Ming Lim of Derby University was once again gracious to accept ISBITM's invitation, and delivered a speech on Radio Frequency Identification as a technological innovation in the supply chain management and logistics. Prof. Tong Yunhuan, Director of the Center for Green Leap Research at Tsinghua University, gave a plenary talk on Green Leap research and business practice in China. A lead track paper presentation by Dr. Chialin Chen of Queen's University on "The Proactive and Reactive Strategies for Green Product Design: Theoretical and Empirical Analyses" was also featured.

Experience of UQueensland Master's Student, Mr. Murilo Pagotto, in Participating 3 International Conferences Related to Sustainable Consumption and Production

During the last semester of my masters' degree of environmental management I had the opportunity to participate in three different international academic conferences in Europe and Asia. Participation in academic conferences is a very important way to expose your research and ideas to colleagues working in the private and academic sectors as well as to build professional connections that will support and improve your career in the future.

Below is an account of my personal experiences in participating 3 international academic conferences. The first conference that I attended this year was organized by the Institute for Advanced Studies on Science, Technology and Society (IAS-STS) in Graz, Austria. Graz is a beautiful and liveable city approximately three hours driving from Vienna. At this conference, I presented one of the papers that I produced under the mentorship of Dr. Anthony Halog, as part of my research project at UQ, called "Towards a Circular Economy: An Application of Input-Output Oriented Approach to Improve Eco-Efficiency of Australia's Food Industry". In this conference, I did an oral presentation in front of approximately 20 people including PhD students and professors from Europe and the USA.

The 2nd international conference that I attended was the International Society of Industrial Ecology in Ulsan, South Korea. For this conference I received a partial scholarship provided by the organizers. Students can normally apply for scholarships or travel grants offered by the conference organiser. Normally any student can apply for this scholarship, however the organizers will first review and evaluate your research project and if they consider it an important and relevant topic for the conference, they will possibly give the students financial support. So if any student is planning to attend to a conference, check in the conference website or with the organizers if there are any available scholarships or travel grants to students. It is important to emphasize that normally there is a deadline application for this travel grant, so if you are planning to attend for a conference, check it as soon as possible.

The third conference that I attended this year was the International Input-Output (IIO) conference in Kitakyushu, Japan. The conference was organized by the International Input-Output Association (IIOA). This organization is a well-recognized international community including members from private, government and academic sectors. At this conference I also applied and received a full scholarship to travel to Japan. My paper was selected by the IIOA's scientific committee to receive one of the ten travel grants awarded by the conference organizers.

In the IIOA conference, we had a pleasant social event organized by the Japanese students who have worked in organising the conference. They call this event as "Young Researchers Meeting". It started after the conference sessions in the third day of the conference. In this meeting all the young researchers participating in the conference were invited to attend to a keynote speech from one Chinese professor about a topic related to the application of Input-Output analysis in the Chinese environmental policy. After the keynote address, all the participants were invited to go to a traditional Japanese restaurant where we enjoyed a really good Japanese food and drinks. In

a traditional Japanese restaurant where we enjoyed a really good Japanese food and drinks. In this conference I met interesting people from over the world with different culture, opinions and perspectives.

Overall, academic conferences are events where you can grow professionally, open your mind for different cultures, political views and future perspectives as well as to have so much fun and meet new friends from every corner of the world. Based in my experiences, I strongly recommend for all students (undergraduate and postgraduate) to attend these events every time they have the opportunity. Also, if someone is interested to attend academic conferences, do not hesitate to contact me at murilopagotto@live.com. I will try to answer any questions or doubts related to academic conferences' application and how you can make this experience useful and enjoyable.

IE Training Programs

StEP
SOLVING THE E-WASTE PROBLEM

E-waste Academy – Scientists Edition

Platinum Sponsor

SWICO recycling

Silver Sponsor

EMPA Materials Science & Technology

DELL™

PHILIPS sense and simplicity

umicore Precious Metals Refining

Host

BASEL CONVENTION

Organiser

UNITED NATIONS UNIVERSITY

Important Dates

01.07.13: Call for Applications Open

19.07.13: Application Deadline for First Priority Travel Grants

31.07.13: Final Application Deadline

15.09.2013: Notification of Selection

01.12—10.12.2013: EWAS 2013*

*tentative dates

The E-waste Academy is a pioneering concept in the research and education on e-waste management, looking at the e-waste issue in its entirety, rather than through the lens of a specific academic discipline. Following three very successful editions, the fourth E-waste Academy – Scientists Edition (EWAS) will be held in **December 2013 in Switzerland** tentatively.

The EWAS provides the foremost platform to young scientists involved in e-waste related research to share their knowledge, interact with experts and develop collaborative partnerships fostering high quality cutting edge scientific research on all areas related to e-waste.

Who & Why

The EWAS is open to PhD students, post-docs and early-career researchers from social and physical sciences investigating the political, social, economic, environmental, health or technological aspects of e-waste. Researchers must be associated to a university or scientific institution and possess a good knowledge of English.

Through a mix of expert lectures, research presentations, group wok and study tours, participants will have a chance to:

- Gain practical insights and broader perspective beyond disciplinary focus
- Share research ideas with domain experts; get rigorous feedback
- Connect with an international network of peers
- Visit state-of-the-art e-waste management facilities

Fees & Grants

Thanks to the generous support of our sponsors, the participation fee for the EWAS is **€ 400 per participant**. This includes the full tuition, accommodation, meals and study tours for the entire duration of the EWAS.

There is financial support (although limited) available as travel grants to some participants, based on merit and need.

Contact & Further Information

Send completed applications to: **ewas@unu.edu**

For questions or clarifications regarding EWAS2013, contact **sinha@unu.edu**

For information on the EWAS and past editions, visit:

http://step-initiative.org/index.php/ewas.html

Application & Selection Process

Applications consist of three documents:

- 3-5 page research paper (excluding references)
- Updated résumé including a list of publications, conference presentations etc.
- A completed application form

Download the application form and template for the research paper from:

http://step-initiative.org/index.php/ewas.html

The EWAS places a special emphasis on the participation of researchers exploring e-waste issues in developing countries.

Topic areas include, but are not limited to:

- Transboundary e-waste flows, international e-waste governance
- Legislation review, policy & regulatory approaches & tools; standards
- Financing and business models; take back system design; reverse logistics
- Design for Re-use and Recycling (DfR)
- Corporate social responsibility (CSR); extended producer responsibility (EPR)
- Environmental & public health issues
- Consumer recycling / reuse/ disposal behaviour; consumer awareness campaign design and communication; marketing
- Material separation, recovery, refining and disposal technologies; formal and informal recycling of e-waste
- Critical raw materials in e-waste
- Modelling and forecasting methodologies

The participants will be selected on the basis of their paper as well as their application form. The evaluators are interested in the motivation of the applicant for participating in the EWAS, the broader research environment of the applicant's institution, support from peers and professors, and other interdisciplinary and geographic linkages.

UQ's Summer Research Scholarships in Industrial Ecology, Circular Economy and LCA

The UQ Summer Research Program provides you with an opportunity to gain research experience working alongside some of the university's leading academics and researchers. Summer Research Scholarships for projects in Industrial Ecology, Circular Economy and Sustainable Consumption and Production available at http://www.qnem.uq.edu.au/index.html?

Consumption and Production available at http://www.gpem.uq.edu.au/index.html?page=198841&pid=114392

Research projects are available for between 6-10 weeks over the summer vacation period (from mid-November to mid-February). Participation is open to undergraduate students, including honours and Masters by coursework students from The University of Queensland as well as students from other international or Australian universities.

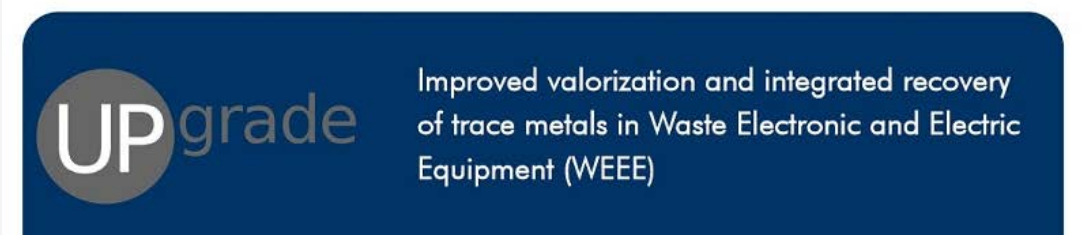
All Summer Research scholars are eligible to apply for a scholarship for the duration of their research (between 6-10 weeks). Non UQ enrolled students (international and domestic), who are required to relocate to Brisbane to participate in the program, can apply for a travel grant to assist with travel costs. Application starts on July 1, 2013. Further details at http://www.uq.edu.au/undergraduate/summer-research

Members' News

Industrial Ecology Virtual Laboratory website launched

Recently the Industrial Ecology Virtual Laboratory project launched its official website at http://www.isa.org.usyd.edu.au/ielab/ielab.shtml. The project aims at a rapid and cost-effective deployment of harmonized, large-scale, detailed Multi-Region Input-Output (MRIO) analysis systems. It uses advanced electronic infrastructure for environmental and economic modelling and significantly enhances analytical capabilities in Life-Cycle Assessment (LCA), carbon footprinting, water footprinting, and other approaches to environmental impact assessment

Further information can also be found at https://nectar.org.au/industrial-ecology-virtual-laboratory.



Issue 1 May 2013

UPgrade - a new BMBF project has started

Waste electric and electronic equipment (WEEE) is an increasingly important source for specialty and strategic metals, raw material source.

In Germany, annually only 700,000 tons electric and electronic equipment are collected for recycling compared to 1.8 million tons EEE put on the market. Once collected, more than 90% of the equipment mass is recycled, mainly due to high recovery rates for steel, aluminum, copper and plastics.

Yet, there are more treasures in obsolete devices than just stell or plastics. Each discarded laptop contains metals such as gold, neodymium and tantalum, and in each flat screen indium can be found. Actual recycling strategies are not able to keep these elements in a closed loop, with two of the reasons being limited collection rates and lack of existing recycling technologies .

Since August 2012, the collaborative project **"Upgrade - Improved valorization and integrated recovery of trace metals in Waste Electronic and Electric Equipment (WEEE)"** started under the coordination and scientific lead of Berlin University of Technology and Münster University of Applied Sciences in cooperation with 11 other project partners from industry and applied research institutes.

The three-year project is funded in the context the research initiative "r³ - innovative technologies for resource efficiency - strategic metals and minerals", launched and funded by the German Ministry of Research and Technology (BMBF). The project aims at enhancing the recovery of trace metals along the value chain by developing new liberation and separation steps (mechanical, thermal, chemical), considering also the technological requirements of final recovery processes. Choosing a product-centered approach, UPgrade also addresses Design-for-Recycling (DfR), acknowledging that product design considerably influences the efficiency of the recycling process.

"Upgrading" material flows along the recycling chain does not aim at a 100% recovery but is the result of an interdisciplinary decision making and optimization process inside recycling networks.

More information about other r³-research alliances can be found at http://www.r3-innovation.de/

Subjects

- UPgrade project start
- EGG2012+ and Münsteraner AWT
- First project milestone
- Focus on flat screens
- Highlight: Indium

Tsinghua-Surrey Short Course on Industrial Ecology

Tsinghua-Surrey short course on industrial ecology was held on 17-23 June 2013, under the financial support of Tsinghua Knowledge Bridging Programme.

Four academics from the University of Surrey, Prof. Roland Clift, Prof. Nigel Gilbert, Dr. Angela Druckman and Dr. Aidong Yang contribute to the course. Dr. Yang gave lectures on rational utilisation of biomass resources based on a systems engineering approach. Dr. Druckman addressed the

Prof. SHI Lei from Tsinghua School of Environment, who organized this academic exchange event, introduced the work of his group on the complexity of industrial ecosystems.

This short course was attended by more than twenty students and young researchers from Tsinghua University, Peking University, Nanjing University, South China University of Technology, Beijing Forestry University, Qingdao University of Science & Technology and Chinese Academy of Sciences.

A workshop on "Industrial ecology and

embedded emissions in trade and Western lifestyles. Prof. Clift discussed the tools and applications of industrial ecology (including LCA and MFA/SFA).

Prof. Gilbert, Principal Investigator of the ERIE (Evolution and Resilience of Industrial Ecosystems) Project, spoke on the Tsinghua Environmental Forum where he presented the framework and progresses of this project. He also gave a two-day course on agent-based modelling

systems approaches" was organized, where PhD students from Prof. SHI's group in Tsinghua and young researchers from Chinese Academy of Sciences presented their work on complex networks and industrial ecology, and had discussions with the visiting academics from Surrey

---

Industrial symbiosis and social networks

By: Inês Costa – ISIE member, manager of the IS Linkedin Group

The Industrial Symbiosis Group in LinkedIn started its activity in March 2009, roughly 4 years ago. The basis for its creation was the realization of a lack in online networks of discussion – publically accessible - on the topic of Industrial Ecology and Industrial Symbiosis. By 2009 LinkedIn was already established as a sound online networking platform, therefore providing a "meeting point" for professionals, researchers, practitioners to come together, interact and share articles, papers, documents and other news related to IE and IS.

Some statistics: we are currently 687 members, most of which seniors (30%), with 16% allocated to research, 10% to consulting and 10% to Program and Project Management. On average, the group receives 2 to 5 new membership requests per week. Applications are accepted based on the CV presented and number of connections, to prevent spammers from accessing the group. Membership peeks typically occur around conference dates – in ISIE, Connaccount and IS research conference – where there's an opportunity to disclose information about the group.

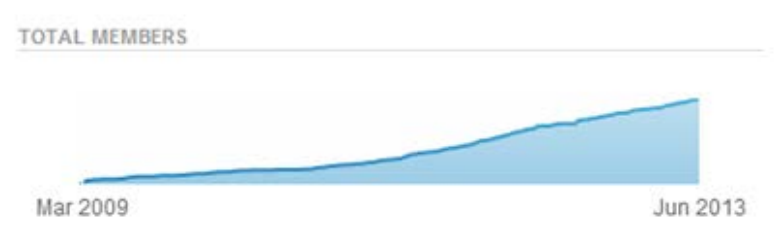


Fig 1 – Statistics about member entry to the IS Linkedin Group

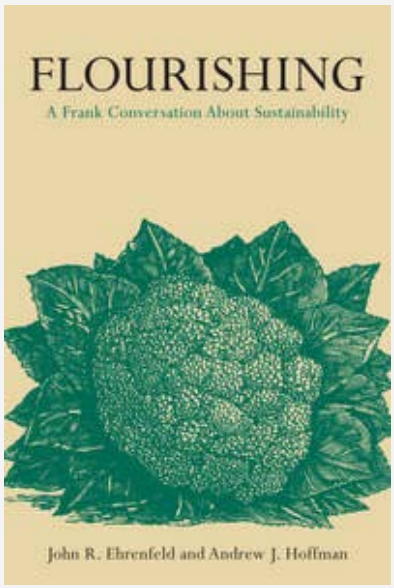
Primarily, the group was directed at discussing IS related topics, extending the discussion period that usually began at IE related conferences. As a group manager, I took upon myself to promote interaction, by launching topics for discussion, usually centred on a particular issue of Industrial Symbiosis (for example, its definition), or the interrelations between IS and waste management, for example.

Soon, as the number of group members evolved, so did the topics present: from announcements on IS/IE related workshops and meetings, to sharing information on IS case studies (which prompted the development of a subgroup call IS Case Studies on Linkedin) or simply to ask the

prompted the development of a subgroup call IS Case Studies on LinkedIn) or simply to ask the members opinion about a particular method or calculation. Off course, most of the activity occurring within the network is information sharing, which is improved by the possibility of sharing documents between members through an online feature.

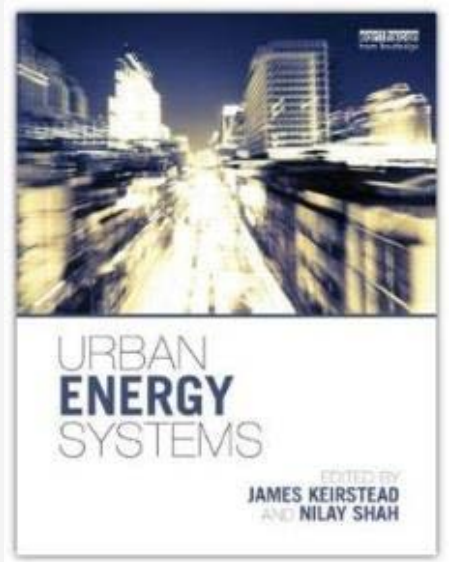
Off course, there is always room for improvement. So we are open to suggestions – and new group members – who would like to share their views on IS/IE and bring new information, and discussion topics to the floor. Just Google “industrial symbiosis” and “Linked In” and you are good to go!

New Book Announcement



Flourishing: A Frank Conversation about Sustainability invites you into a conversation between a teacher, John R. Ehrenfeld, and his former student now professor, Andrew J. Hoffman, as they discuss how to create a sustainable world. Unlike virtually all other books about sustainability, this one goes beyond the typical stories that we tell ourselves about repairing the environmental damages of human progress.

New Book Announcement



The book draws together the results of a five-year research project and covers:

- the major drivers and trends in urban energy systems
- a review of key urban energy technologies including district energy systems, efficient buildings, transport systems, and renewables
- state-of-the-art modelling methods for optimized design, operations, and agent-based simulation
- a series of case studies describing how more efficient urban energy systems can be achieved in practice.

More information can be found at http://www.routledge.com/books/details/9780415529020/.

James Keirstead and Nilay Shah (Imperial College London) have recently published Urban Energy Systems: An Integrated Approach (Earthscan/Routledge). The book's release was celebrated with a launch event at the Institution of Civil Engineers in central London, attended by over 70 guests from the private and public sectors.

Research Experience for High School Students on Sustainability (RES^3)

While teaching a summer course at Shanghai Jiao Tong University's UM-SJTU Joint Institute (http://www.umji.sjtu.edu.cn/) since May, Ming Xu (http://www-personal.umich.edu/~mingxu) initiated an outreach program Research Experience for High School Students on Sustainability (RES^3) at Sichuan University Affiliated High School in collaboration with China West International Education (http://www.cwiedu.com/).

Approximate 20 high school students participate in the program. They are divided into three groups to design and conduct simple life cycle analysis studies. Students have been comparing the life cycle environmental impacts of paper vs. plastic, CD music vs. digital music, plastic chopsticks vs. metal chopsticks, among others.

The International Life Cycle Academy 2013 Challenge: Best Practice in LCA Teaching

To all teachers of LCA,

The International Life Cycle Academy (ILCA) invites all teachers of LCA to participate in our 2013 Challenge of Best Practice in LCA Teaching, which is an appraisal of best teaching practice within 9 LCA topics (see below).

We challenge LCA teachers worldwide to compare their teaching practice with others in the same area, in view to promote excellence in LCA teaching. Your main incentive for participation should be the possibility to compare your own practice with that of others, to learn from others, to contribute to the harmonisation of terminology and methods, and to obtain ILCA recognition for

contribute to the harmonisation of terminology and methods, and to obtain ILCA recognition for your LCA courses. The best contribution within each topic receives an invitation to teach in a special 2014 ILCA Best Practice LCA course and teachers' workshop, with travel costs and fees paid.

The deadline for submission to the challenge is 31st December 2013. Submissions can be made at any time during the year, and evaluation will start immediately after submission. So the sooner you submit, the sooner you will receive feedback. Submissions can be in any language, but only one language per submission.

If you are interested in participating, the most important issue to be aware of right now is that we require you to submit an electronic video recording of your lecture and exercise sessions, to show the interaction with and/or among students. You should therefore consider how you will make this recording, in order to have it ready for your submission (teachers who have made such recordings tell us that they are also excellent tools for personal self-evaluation!)

Submissions can be made in the following topics:

1) Introduction to LCA / Goal and Scope of LCA
2) System boundaries
3) Attributional and consequential modelling
4) Data and data sources
5) Scenarios and forecasting
6) Calculation routines
7) Impact assessment
8) Uncertainty and sensitivity analysis
9) Interpretation, reporting and graphical presentation

Full courses may also be submitted, even if they cover less or more than the above topics, but the evaluation for the 2013 Best Practice Award will be restricted to the 9 topics above. Full courses that pass the evaluation threshold are invited to apply for ILCA recognition, which includes the right to use the ILCA logo and free advertisement on the ILCA website.

Read more about the topics, the materials required for a submission, and the evaluation procedure at www.ilca.es or email Miguel@ilca.es.

We look forward to your contribution!
Bo Weidema and Miguel Brandão

Recetnly received grants and awards

Walter R. Stahel, vice secretary general and head of the Risk Management Programme of the Geneva Association, was awarded an Honorary Doctorate by the University of Surrey in recognition of his outstanding contributions to the field of sustainability.

From left to right: Professor Sir Christopher Snowden, President and Vice-Chancellor
Dr John Forrest, Pro-Chancellor (and Presiding Officer of the Ceremony) Dr Walter Stahel
Professor Roland Clift, CBE, Emeritus Professor of Environmental Technology (and Honorary Graduate Presenter).

Mikhail Chester and Tom Seager (Arizona State University) with a team from UCLA (Stephanie Pincetl and David Eisenman) were awarded a National Science Foundation grant from the Infrastructure Management and Extreme Events program to study how infrastructure contributes to social vulnerability to heat in the US Southwest.

The research team will assess access to cooling, building envelope thermal properties, and likelihood of power outages for neighborhoods in Phoenix and Los Angeles and will create a socio-technical heat vulnerability index for cities. Ultimately, the team plans on producing a prioritization strategy for cities to cost-effectively invest in heat vulnerability reductions.

Ivan Muñoz Ortiz Joins the International Life Cycle Academy in Barcelona, Spain

Ivan started working in life cycle assessment (LCA) in 1998, in the area of solid waste management. During his PhD on environmental science he focused my research on the suitability of LCA as a tool for Green Chemistry.

After finishing his PhD in 2006 in Barcelona, he was a research fellow in several universities: ESCI-Universitat Pompeu Fabra (Barcelona, Spain), Centro de Investigaciones de la Energia Solar-University of Almeria (Spain) and Centre for Environmental Strategy-University of Surrey (UK).

In 2009 he moved to the UK, where he joined the consumer goods company Unilever as a sustainability scientist. It is with great excitement that he is now coming back to Barcelona, where he will be working for the International Life Cycle Academy and 2.-0 Consultants.

Upcoming Conferences

SETAC Europe 19th LCA Case Study Symposium
11-13 November 2013 – Rome, Italy

LCA in market, research and policy: harmonisation beyond standardisation

Co-organised by
SETAC, ENEA, ISIE, with the support of the Italian LCA Network

2nd CALL FOR PAPERS

Topics for the call for papers

- ❑ **ISIE Special session:** LCA as a tool for supporting policies and performance-based regulation
- ❑ LCA in the context of green growth strategies and policies
- ❑ Environmental Footprints
- ❑ Life cycle communication
- ❑ Teaching and education in sustainability
- ❑ LCA and Ecodesign
- ❑ Product (Environmental Footprint) Category Rules
- ❑ Simplified LCA methods and tools
- ❑ LCA and SMEs
- ❑ Participatory approaches in life cycle-based methods
- ❑ LCA and Sustainability

Publication

Authors are invited to submit their abstract to potentially results in an invitation to write a full scientific article to be published in IEAM.

Important dates

- **Abstract submission due: 5 September**
- Abstract notification: 20 September
- Registration open: 1 September
- Early registration deadline: 1 October
- Full paper submission for IEAM: 15 December

For more details and for paper submission, please visit the conference website at
http://lcarome.setac.eu

EcoBalance 2014: Save the date and come back to East Asia!
Yasushi Kondo, Chair of the EcoBalance 2014 Conference

The biannual ISIE Conference in Ulsan, South Korea, including both the academic part and the hospitality of East Asia, was a great success. Are you looking forward to an opportunity to visit East Asia again? If so, let it become a reality in 2014! That is when the EcoBalance Conference will take place: 27–30 October, 2014, in Tsukuba, Japan.

Held regularly since 1994, EcoBalance is one of the longest established international conferences discussing methodologies and practices for sustainability based on life-cycle thinking. The scope of the EcoBalance Conference is not limited to LCA, although the Institute of LCA, Japan, is its organizer, and it overlaps pretty much with that of ISIE.
I am very happy to welcome you, ISIE members, to EcoBalance and to Japan. Please visit the website, save the date, and grab this chance to come back to East Asia!

EcoBalance 2014 website: http://ilcaj.sntt.or.jp/EcoBalance2014/
Abstract submission deadline: 25 March 2014

Open Positions

Postdoctoral Research FellowThe Institute for Environmental Sceince and Policy, University of Illinois

The Institute for Environmental Science and Policy at the University of Illinois at Chicago is seeking candidates for a post-doctoral scholar to work in the area of life cycle assessment of nano-enabled products. The ideal candidate will have experience in a research environment on areas related to nanotechnology, life cycle assessment, material flow analysis, agent-based modeling, and integrative science. Ph.D. required.

The successful candidate will have the opportunity to work with an emergent group of scholars from several universities who are concerned with the environmental, social, and economic implications of nanotechnology and nano-enabled products. Competitive salary and benefits will be offered, along with funding to attend conferences to deliver papers and interact with fellow researchers.

The position starts as early as January 2014. Interested applicants should send a cover letter, CV, the names of three references, and at least one published manuscript to Professor Thomas L. Theis (theist@uic.edu).

PhD Position, Developing a dynamic and applicable Industrial Symbiosis data repository by use of semantic web tools extracting from and combining major European databases.
TU Delft

Industrial Symbiosis is one of the key elements in reaching climate impact reduction in industrial clusters. It enables the users of the concepts to reach resource efficiency, because of a smarter use of substances, it enables energy efficiency because of more optimized energy patterns. It also allows for a better governance of integrated industrial complexes, because of better insight into value chains and legislative frameworks. In all of those various applications, clearly a reduction of climate impact can be realised.

Crucial in finding possible synergies within industrial clusters is to know the location, magnitude, and specifications of material flows, available energy, existing permits, economics of supply chains etc. All those data have to be brought together in an useful way. Many initiatives exist in the Industrial Symbiosis field in which a practitioner collect this information by a direct inventory to all the stakeholders in the cluster. However, a lot of data is already available in datasets on an European level and in that way linked to national bureaus of statistics, governmental agencies, branch organisations, etc. Much of this data is just available via open data sets on websites, in accessible documents, or databases.

This project looks to structure data relevant to industrial symbiosis into a central data repository. This will be done by the use of semantic wikibased tools, that enables the researcher to search for information in a semi-automatic way. The background of the use and development of those open source data management tools have been described in detail in the PhD thesis of Chris Davis: ‘Making sense of open data’ (Davis 2012). In this thesis the application is mainly on energy networks, a challenging task is now to turn this knowledge in an application to industrial clusters that also will require adaptation and further development of the already existing tools.

The project is focused on allowing for and enabling the construction of varied end-use applications for the research and facilitation of industrial symbiosis. This facilitation will be mainly done by identification of potential synergies between various industrial partners at the level of by product exchange, utility sharing, and shared governance.

Since the usage of the data repository strongly depends on the demands of the target group, several case studies will be done to show possible applications in various contexts. The final result will be highly innovative, because it leads to:

1. Intensive use of open data, their integration and application, and the involved development of open source
2. Data management tools;
3. Creation of matching material terminology and synonyms across available datasets such as LCI, waste, and
4. Case study sources;
5. Expanding upon and standardizing the information available from Industrial Symbiosis case studies;
6. Improved web based matching tools, like reverse infrastructures and semantic wiki, and consultant tools for
7. Enabling strategic facilitation;
8. Plugins for popular web business platforms to actively promote new symbiosis;
9. Research tools for comparing symbiosis scenarios and the creation of new business models.

For further information please us at P.M.Herder@tudelft.nl or G.Korevaar@tudelft.nl

The ISIE newsletter is published four times a year. The aim of the newsletter is to keep our members informed about the latest and greatest ISIE news from around the globe. We can

members informed about the latest and greatest ISIE news from around the globe. We can only do it with your help! Please send us any information you think is worth including in the newsletter (conference summary, important publications, job posting, new appointments, etc.) to Vered Blass, isienewsletter@gmail.com