



## April 2017 News from the International Biochar Initiative for Members and Supporters

### From the Chairman:

IBI networks farmers, resource managers, and businesses with supporting organizations in research, government, and non-governmental organizations. We can use industrial and distributed systems to solve food security and environmental challenges in all regions. Farmers in China, Europe, Australia and North America, where industrial production is growing, share the development of techniques for small scale, decentralized, carbonization with developing areas like Warm Heart Foundation in Thailand and the Philippine Biochar Association. We are making progress. Let's show how biochar can contribute to 12 of the 17 United Nations [Sustainable Development Goals](#) for 2030. Contact [IBI](#) to help us share your research and practical experience through our newsletters, webinars, and social media.

### Biochar related jobs or relevant scholarship opportunities

Marie Curie Early Stage [Researcher](#) in Synergies in Sequential Uses of BioChar; University of Edinburgh, starting June 2017

Umea University, Sweden: [Postdoctoral position](#) in Chemistry (with focus on Environmental Chemistry) Applications due May 2, 2017!

Swansea University, Wales, UK. Research Scholarships in Physical Geography: [KESS II Funded PhD Studentships](#): Re-vegetation and stabilization of toxic mine waste using biochar compost. Closing date: 17 May 2017

**Scholarships Available for U.S. College Students Doing Compost-Related Research; [CCREF Young Investigators Scholarship](#)**: applications accepted through June 30, 2017

### Biochar Webinar Series

Thank you to our April Webinar presenters Jeff Hallowell, CEO of Biomass Controls, and Dr. Saran Sohi from the University of Edinburgh. 85 people registered for the event from 15 different countries. We also thank John Hofmeyr, a new IBI member for putting together a bibliography of recent research on the topic of Sewage Sludge & Biochar. This paper will be sent out to all those that registered for the Webinar.

Previous webinars are accessible to IBI members for free via the Members Only page a few days after the Webinars take place. Non-members that would like to view previous 2017 webinars, may pay a one-time fee of \$40. Further information is available on our [Webinars Series page](#).



The May IBI Biochar Educational Webinar (date to be determined) will focus on the use of biochar in building materials & composites. Presenters include: Hans-Peter Schmidt from the Ithaca Institute for Carbon Intelligence, John McDonald-Wharry, a biochar researcher from New Zealand, and Kua Harn Wai, Associate Professor at the National University of Singapore.

## **New and renewing organizational & business member spotlight**

*Note: corporate bios below were provided by members (or from websites) and not written by IBI*

New business member: Green Life Products, United Kingdom

Green Life, provides both project development design, structure and implementation support for renewable and low carbon developments as well as promoting direct use products and services which include, food waste to organic fertiliser, biomass to char and gas, smart structures for control and life management to reduce Co2 and energy waste, Environmental compliance audits. We work to find solutions for clients in the reduction and removal of waste - in all forms, from society. [www.glp ecotech.com](http://www.glp ecotech.com)



New organizational member:  
City of Lebanon, TN United  
States



The City of Lebanon [recently commissioned](#) a new waste-to-energy gasification plant in Tennessee. The plant utilizes patented downdraft gasification technology which will generate 1,800,000 kilowatt-hours of electricity, eliminating 2,500 tons of carbon emissions and keeping 8,000 tons of waste out of landfills. They anticipate that they will produce 1.6 tons of biochar per year.

New organizational member: Bambusa Global Ventures, Cambodia

BGV rehabilitates an otherwise unmanaged resource of natural bamboo in rural Cambodia to provide maximum social, ecological, and economic benefits to the members of the rural forest communities and to protect and conserve the bamboo forests. [www.bambusaglobal.com](http://www.bambusaglobal.com)



Our objectives are to:

- Educate and empower local forest communities to manage natural bamboo into a sustainable economic model.
- Implement top value chains and products from the natural bamboo
- Undertake partnerships to develop bamboo plantations to reduce carbon emissions and develop alternative energy sources
- Expand markets for bamboo products that value social impact, environmental stewardship, and balance of profits

## Regional Updates

IBI Asia. IBI welcomes Ms. Daisy Yu, an expert of international scientific exchange and coordination from the Division of International Affairs, Sichuan Provincial Association of Science and Technology, who will coordinate contact with IBI Asian Center members, local users, and IBI members; edit communications; and coordinate membership development in the region. Dr. Genxing Pan, Nanjing Agricultural University, will augment the IBI Asian Center with a Biomass and Biochar Institute in Jinhua Municipality, where the local government supports biochar technology for organic wastes with outreach, policies, and scientific achievement. Dr. Pan will organize a biochar workshop at Nanjing for the Fall.

Warm Heart Foundation, in Chiang Mai, Thailand, has completed an initial crop year of testing of biochar made in small scale trough carbonizers for the project, "[Banding with Biochar in Established Orchards for Water Management, Water Retention, and Tree Nutrition](#)". The project is part of a Warm Heart [Environmental Program](#) to reduce unhealthy open burning of agricultural residues and improve crop production. Dr. Michael Shafer welcomes collaboration with other organizations in the region.

The Philippine [Department of Environment and Natural Resources](#) (DENR), together with the Philippine Biochar Association has launched a major program of biochar training for miners and workers displaced by the closure or suspension of mining firms in the region to use biochar technology as an alternative source of income and livelihood.

A [Nordic Development Fund](#) project testing biochar's potential as fertilizer in Nepal received an award in April 2017 for best International Development Project. The award was given to Landell Mills for best International Development Project by British Expertise International. Landell Mills is a UK-based international development consulting firm. The project was an Asian Development Bank-administered and NDF-funded project in Nepal titled Mainstreaming Climate Change Risk Management in Development. Landell Mills was the technical assistance service provider.



The [African Biochar Partnership \(ABP\)](#) is an "open continental platform" for advancing the cause of Biochar Systems in Africa which was launched on March 1st, 2016 in Nairobi - Kenya at the International Workshop on Biochar Systems for Africa. It was organized by the "[BiocharPlus](#)" project in collaboration with "[Biochar for Sustainable Soils](#)" project. The organization is making progress, according to ABP director, Dr. Bah Saho, Cape Verde. IBI hopes to support the ABP by networking their expertise and other projects in Africa, like the [SIANI Expert African Biochar Group](#), the [DANIDA-WEBSOC](#), and with IBI members throughout Africa.

## The IBI Online Biochar Training Course is Ongoing

Gain in-depth knowledge on biochar and biochar systems. Register for IBI's online course, Biochar Training for Environmental Sustainability and Economic Development. This ten week, ongoing course provides participants an intensive training series on all aspects of biochar, presented by leading biochar experts. Learn about best-science updates on biochar, biochar production and use, how to overcome the barriers to commercialization. 19 separate lessons-each with a subject overview, a recorded audio/video presentation lasting 30 - 45 minutes and quizzes to test comprehension and retention. An optional introductory presentation on the basics of biochar allows participants to start the course with a common understanding. Course materials are presented in a user-friendly online format. Participants can access the course at their convenience over ten weeks and will receive a certificate of completion at the conclusion of the course.

Course materials are based on presentations from the June 2014 in-person biochar training course titled, "Biochar for Environmental Sustainability and Economic Development," hosted by the University of

Santiago de Compostela, Spain, and developed and presented by IBI and collaborators. For more information on member and non-member pricing and registration, please see: [www.biochar-international.org/online\\_course](http://www.biochar-international.org/online_course)

## Upcoming Calendar Events

- [Biochar 101](#): Making Biochar from Woody Biomass, May 6<sup>th</sup>, Friday Harbor, WA
- [Carbon Farming & Biochar Workshop](#), **May 20<sup>th</sup>**, Boathouse Beer Garden, Romulus, New York. Note: IBI Board Members Dr. Johannes Lehman and Kathleen Draper will be presenting at this event.
- [Biochar from the Ground Up](#), June 12 – 16. Hosted by [The Farm](#), Summertown, TN. This workshop is focused on providing an overview of non-soil uses of biochar uses including its use in building materials, filtration, livestock farming, sewage sludge, and remediation. It will provide a review of research and current practices on uses, production, regulations and more.
- [European Biomass Conference & Exhibit EUBCE](#) June 12 - 15 2017 Stockholm Sweden,
- BIOCHAR AND SLOW-SAND BIOFILTRATION FOR POTABLE WATER - 3 DAY INTENSIVE - AUGUST 1-3, 2017. Location: San Miguel de Allende, Mexico. Tuition: \$500. In this 3-day intensive course, participants will delve into theory and practical application of biochar adsorption for organic chemical contaminants – a growing concern in developing communities around the globe – and slow-sand filtration for biological water contaminants – the leading cause of water related illness and death in the world. Students will produce and process biochar and sand filtration media and install a full-scale 300 liter/day integrated treatment system in a local community. The course is presented by Caminos de Agua ([caminosdeagua.org](http://caminosdeagua.org)) and Aqueous Solutions ([aqsolutions.org](http://aqsolutions.org)). (<http://www.sustainabletechnologiesinaction.org/biochar-and-slow-sand-biofiltration-for-potable-water/>)
- [Australia New Zealand Biochar Conference](#) August 10 – 12, 2017, Tweed, Australia. The aims and objectives of ANZBC17 are to bring together Scientists & Growers to bridge the gap between fundamental science, applied science & commercial applications, to unite the various Biochar groups from each State in Australia & New Zealand, to showcase the very latest technology to match the biomass source, value added bio-products, methods of applications and scientific results and commercial trial methods and results. Conference themes include: Technology & Production for matching sustainable biomass sources; Value added Bio-Products; Applied Science (Discoveries & Results); Commercial Applications (Methods & Results). Additional info can be found [here](#) and [here](#)
- [Biochar: Production, Characterization & Applications](#), Alba, Italy, Hotel Calissano, **August 20-25, 2017**. Contact [IBI](#) if you plan to attend and are willing to help man an IBI table at the conference.
- [International Symposium on Growing Media, Soilless Cultivation, and Compost Utilization in Horticulture](#), **August 20-25**, in Portland OR. Attendees are welcome to submit abstracts and requests to give talks/presentations (or posters) during the meeting as well if desired.
- [2<sup>nd</sup> Second Global Soil Biodiversity Conference in Nanjing](#), October 15-17, 2017, Nanjing, China. [Call for Abstracts](#) for *Biochar for soil biota and biodiversity* session. Session contact: Dr. Genxing Pan. Email: [pangexing@aliyun.com](mailto:pangexing@aliyun.com); [gxpan1@hotmail.com](mailto:gxpan1@hotmail.com)

See the IBI Calendar page for more events. To add an event to the calendar, send the information to [info@biochar-international.org](mailto:info@biochar-international.org) .

## **Discounts on Biochar Books for IBI Members**

IBI has secured discounts for IBI members on two new biochar books listed below. Members can obtain the 20% discount codes at the [IBI Member's Only Page](#).

[Biochar: A Guide to Analytical Methods](#), Editors: Balwant Singh\*, Marta Camps, Johannes Lehmann. IBI members will receive a 20% discount.

## **A Selection of Recently Published Biochar Research and Resources**

The IBI White paper on Polycyclic Aromatic Hydrocarbons in Biochar has recently been translated into French and is now available on line in the Members Only section. Our thanks to William Stevenson for his translation efforts!

Park, CM; Han, JH; Chu, KH; Al-Hamadani, YAJ; Her, N; Heo, JY; Yoon, YM, Influence of solution pH, ionic strength, and humic acid on cadmium adsorption onto activated biochar: Experiment and modeling, JOURNAL OF INDUSTRIAL AND ENGINEERING CHEMISTRY, 2017, 48, 186-193

Zhang, DJ; Li, W; Hou, C; Shen, JY; Jiang, XB; Sun, XY; Li, JS; Han, WQ; Wang, LJ; Liu, XD, Aerobic granulation accelerated by biochar for the treatment of refractory wastewater, CHEMICAL ENGINEERING JOURNAL, 2017, 314, 88-97

Zhou, Z; Liu, YG; Liu, SB; Liu, HY; Zeng, GM; Tan, XF; Yang, CP; Ding, Y; Yan, ZL; Cai, XX, Sorption performance and mechanisms of arsenic(V) removal by magnetic gelatin-modified biochar, CHEMICAL ENGINEERING JOURNAL, 2017, 314, 223-231

Song, X; Ning, P; Wang, C; Li, K; Tang, LH; Sun, X; Ruan, HT, Research on the low temperature catalytic hydrolysis of COS and CS<sub>2</sub> over walnut shell biochar modified by Fe-Cu mixed metal oxides and basic functional groups, CHEMICAL ENGINEERING JOURNAL, 2017, 314, 418-433

Karppinen, EM; Stewart, KJ; Farrell, RE; Siciliano, SD, Petroleum hydrocarbon remediation in frozen soil using a meat and bonemeal biochar plus fertilizer, CHEMOSPHERE, 2017, 173, 330-339

Yue, Y; Cui, L; Lin, QM; Li, GT; Zhao, XR, Efficiency of sewage sludge biochar in improving urban soil properties and promoting grass growth, CHEMOSPHERE, 2017, 173, 551-556

Gonzalez, ME; Cea, M; Reyes, D; Romero-Hermoso, L; Hidalgo, P; Meier, S; Benito, N; Navia, R, Functionalization of biochar derived from lignocellulosic biomass using microwave technology for catalytic application in biodiesel production, ENERGY CONVERSION AND MANAGEMENT, 2017, 137, 165-173

Liu, C; Liu, F; Ravnskov, S; Rubaek, GH; Sun, Z; Andersen, MN, Impact of Wood Biochar and Its Interactions with Mycorrhizal Fungi, Phosphorus Fertilization and Irrigation Strategies on Potato Growth, JOURNAL OF AGRONOMY AND CROP SCIENCE, 2017, 203, 131-145

Sorrenti, G; Buriani, G; Gaggia, F; Baffoni, L; Spinelli, F; Di Gioia, D; Toselli, M, Soil CO<sub>2</sub> emission partitioning, bacterial community profile and gene expression of Nitrosomonas spp. and Nitrobacter spp. of a sandy soil amended with biochar and compost, APPLIED SOIL ECOLOGY, 2017, 112, 79-89

Zhang, CS; Lin, Y; Tian, XY; Xu, Q; Chen, ZH; Lin, W, Tobacco bacterial wilt suppression with biochar soil addition associates to improved soil physiochemical properties and increased rhizosphere bacteria abundance, APPLIED SOIL ECOLOGY, 2017, 112, 90-96

Tripti; Kumar, A; Usmani, Z; Kumar, V; Anshumali, Biochar and flyash inoculated with plant growth promoting rhizobacteria act as potential biofertilizer for luxuriant growth and yield of tomato plant, JOURNAL OF ENVIRONMENTAL MANAGEMENT, 2017, 190, 20-27

N Nan, DB DeVallance - [Development of poly \(vinyl alcohol\)/wood-derived biochar composites for use in pressure sensor applications](#). Journal of Materials Science

[S Gupta, HW Kua - Factors Determining the Potential of Biochar As a Carbon Capturing and Sequestering Construction Material: Critical Review](#); Journal of Materials in Civil Engineering, 2017 - [ascelibrary.org](http://ascelibrary.org)

ZD Nejad, JW Kim, MC Jung - [Reclamation of arsenic contaminated soils around mining site using solidification/stabilization combined with revegetation](#); Geosciences Journal, 2017

TP Prasai, [KB Walsh](#), [DJ Midmore](#), SP Bhattarai - [Effect of biochar, zeolite and bentonite feed supplements on egg yield and excreta attributes](#); Animal Production Science - CSIRO

[YM Awad](#), SE Lee, [MBM Ahmed](#), NT Vu - [Biochar, a potential hydroponic growth substrate, enhances the nutritional status and growth of leafy vegetables](#); Journal of Cleaner Production, 2017

AB Smebye, [M Sparrevik](#), [HP Schmidt](#), G Cornelissen [Life-cycle assessment of biochar production systems in tropical rural areas: Comparing flame curtain kilns to other production methods](#); Biomass and Bioenergy, 2017

[S Jain](#), [P Khare](#) [Biochar: An Emerging Panacea for Contaminated and Degraded Soils](#); - Green Technologies and Environmental Sustainability, 2017

LW Ngatia, YP Hsieh, D Nemours, R Fu, RW Taylor; [Potential phosphorus eutrophication mitigation strategy: Biochar carbon composition, thermal stability and pH influence phosphorus sorption](#). Chemosphere, 2017

We encourage all those that have yet to renew their membership, to do so now via the [IBI website](#).

**International Biochar Initiative** [www.biochar-international.org](http://www.biochar-international.org) [info@biochar-international.org](mailto:info@biochar-international.org)

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