



## News from the International Biochar Initiative

IBI is a non-profit organization supporting researchers, commercial entities, policy makers, farmers & gardeners, development agents and others committed to sustainable biochar production and use.

Help put the Earth **Back in the Black**

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

#### Biochar related jobs

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

Seeking PhD [student](#) in Soil Microbiology, University of Wisconsin - Madison, Whitman Lab. Enquiries due by April 15<sup>th</sup>

#### Upcoming Webinars

The next IBI Biochar Educational Webinar is scheduled for April 27<sup>th</sup> from 1:00 – 2:30 EDT. The topic will be Sewage Sludge & Biochar. Speakers will include Jeff Hallowell, CEO of Biomass Controls, and Dr. Saran Sohi from the University of Edinburgh. Further details will be available soon.

Additional webinars being planned include: May - Biochar building materials & Composites; June – Carbonizing Urban Green Waste. If you have suggestions for webinar topics or speakers, please send an email to: [webinars@biochar-international.org](mailto:webinars@biochar-international.org)

Thank you to our March Webinar presenters Dr. Balwant Singh from the University of Sydney and Jonah Levine from Confluence Energy. Eighty people registered for the event from more than 20 countries. Previous webinars are accessible to IBI members for free via the Members Only page. Non-members that would like to view previous 2017 webinars, may pay a one-time fee of \$40. Further information available on our [Webinars Series page](#).

#### 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: Concord Blue Energy, United States

Concord Blue is a waste management company that transforms nearly any form of local waste into a variety of clean, renewable fuels. Concord Blue has developed a revolutionary closed-loop system that efficiently and cost-effectively produces the highest quality sustainable energy with virtually no pollutants. Unlike other available waste-to-energy processes, Concord Blue's unique technology benefits the environment, fulfilling all international, EPA and European regulations for renewable energy and air emissions. For more information, please visit: <http://www.concordblueenergy.com/>



Renewing business member: Arsta Eco, India



ArSta Eco is a technology company working on innovative methods of production and commercialization of Biochar. Set in the heart of the Coconut growing belt of Karnataka, India, the company utilizes the abundant residues from this industry. Coconut shell, husk and frond are all utilized in producing various grades of Biochar targeting buyers in the Water Treatment, Agricultural and associated industries. Deploying a modern stand-alone multi feed constant fed Reactor that has multiple product streams of Biochar, Energy and Distillates, the company is negotiating to commission further reactors to key clients keen to solve multiple Agricultural and Municipal waste problems existing within a developing India. ArSta Eco targets to set up multiple reactors in a distributed model to produce Biochar and Clean Energy thereby contributing to meaningful GHG reductions.

Working with rural farm clusters ArSta Eco educates farmers in crop yield enhancement, improved irrigation, waste management and decentralised power generation leading to enrichment of life and raised living standards. We strongly believe that "Localization is the key to sustainability and rural livelihood security". In addition we collaborate with key Universities exploring new uses for Biochar and welcome research enquiries. For more information, see <http://www.arstaeco.com>.

Renewing business member: Cool Planet, United States



Cool Planet provides an Engineered Biocarbon platform that can significantly improve soil health while sequestering carbon. The platform technology impacts three of the world's largest markets: food, water, and energy.

Renewing organization member: European Bioenergy Research Institute (EBRI)



The European Bioenergy Research Institute (EBRI), led by Tony Bridgewater, encompasses the founding Bioenergy Research Group (BERG) and the new Surfaces, Materials and Catalysis Group (SMAC) to create a world leading platform for research and development into the utilisation of waste and non-food crops in next generation bio-energy and bio-refining technology to produce both bio-fuels and renewable chemical feedstocks.

EBRI performs research and knowledge transfer in all aspects of bioenergy, applying chemical engineering science and technology to the development of advanced processes for the production of liquid and gaseous fuels, chemicals, heat and electricity from biomass and waste. Current activities in thermal processing span fast pyrolysis and gasification of biomass with complementary work on system design and technical, economic and commercial evaluation, including biomass preparation, process design, reactor modelling, catalytic pyrolysis and the optimisation, characterisation, upgrading and blending of bio-oil. For more information, please visit EBRI's [website](#).

## Regional Updates



Earlier this month an enthusiastic group launched The [Finnish Biochar Association](#) while hosting an informal gathering near Helsinki where they tested different technologies which could be used to carbonize reed and forestry residues. Testing such technologies on a frozen lake could be a first!

## Volunteer Writers Needed for IBI

IBI is looking for volunteer Copy Editor and Writers to help us promote more biochar success stories. We have a need for a newsletter editor as well as writers willing to craft articles about various biochar projects and technologies from around the world. This position will benefit volunteers by connecting them to other individuals helping to make biochar successful. If you have a background in writing or editing and would be interested in helping, please send an email to [info@biochar-international.org](mailto:info@biochar-international.org). Excellent English is required.

## 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

- [BIOCYCLE EAST COAST17](#) Baltimore, Maryland Turf Valley Hotel, **April 4 - 7, 2017**,
- [International Bioenergy \(Shanghai\) Conference and Exhibition](#), April 20 – 21, Shanghai, China
- [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 ([agsolutions.org](http://agsolutions.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**
- [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, deadline April 1, 2017. 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.

[Biochar: A Regional Supply Chain Approach in View of Climate Change Mitigation](#), Editor: V. Bruckman et al. IBI members are eligible for this discount until the end of April 2017.

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

Wan, S; Wang, SS; Li, YC; Gao, B Functionalizing biochar with Mg-Al and Mg-Fe layered double hydroxides for removal of phosphate from aqueous solutions JOURNAL OF INDUSTRIAL AND ENGINEERING CHEMISTRY 2017 47 246-253

Li, Y; Zhu, YL; Liu, XG; Wu, XH; Dong, FS; Xu, J; Zheng, YQ Bioavailability assessment of thiacloprid in soil as affected by biochar CHEMOSPHERE 2017 171 185-191

Clemente, JS; Beauchemin, S; MacKinnon, T; Martin, J; Johnston, CT; Joern, B Initial biochar properties related to the removal of As, Se, Pb, Cd, Cu, Ni, and Zn from an acidic suspension CHEMOSPHERE 2017 170 216-224

Ahmed, MB; Zhou, JL; Ngo, HH; Guo, WS; Johir, MA; Sornalingam, K Single and competitive sorption properties and mechanism of functionalized biochar for removing sulfonamide antibiotics from water CHEMICAL ENGINEERING JOURNAL 2017 311 348-358

Farhangi-Abriz, S; Torabian, S Antioxidant enzyme and osmotic adjustment changes in bean seedlings as affected by biochar under salt stress ECOTOXICOLOGY AND ENVIRONMENTAL SAFETY 2017 137 64-70

Laird, DA; Novak, JM; Collins, HP; Ippolito, JA; Karlen, DL; Lentz, RD; Sistani, KR; Spokas, K; Van Pelt, RS Multi-year and multi-location soil quality and crop biomass yield responses to hardwood fast pyrolysis biochar GEODERMA 2017 289 46-53

Alhashimi, HA; Aktas, CB Life cycle environmental and economic performance of biochar compared with activated carbon: A meta-analysis RESOURCES CONSERVATION AND RECYCLING 2017 118 13-26

Vithanage, M; Herath, I; Joseph, S; Bundschuh, J; Bolan, N; Ok, YS; Kirkham, MB; Rinklebe, J Interaction of arsenic with biochar in soil and water: A critical review CARBON 2017 113 219-230

Luo, Y; Zang, HD; Yu, ZY; Chen, ZY; Gunina, A; Kuzyakov, Y; Xu, JM; Zhang, KL; Brookes, PC Priming effects in biochar enriched soils using a three-source-partitioning approach: C-14 labelling and C-13 natural abundance SOIL BIOLOGY & BIOCHEMISTRY 2017 106 28-35

Fristak, V; Michalekova-Richveisova, B; Viglasova, E; Duriska, L; Galambos, M; Moreno-Jimenez, E; Pipiska, M; Soja, G Sorption separation of Eu and As from single-component systems by Fe-modified biochar: kinetic and equilibrium study JOURNAL OF THE IRANIAN CHEMICAL SOCIETY 2017 14 521-530

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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