



May 2015 News from the International Biochar Initiative

Coming Soon: Online Biochar Training Course from IBI

Are you interested in gaining more in-depth knowledge on biochar and biochar systems? A new online course from the IBI, *Biochar Training for Environmental Sustainability and Economic Development*, is an intensive training series on all aspects of biochar, presented by leading biochar experts. Over 10 weeks, participants will learn about best-science updates on biochar to promote the uptake of biochar production and use, and actions necessary to overcome the barriers to commercialization of the biochar industry. Participants will study biochar production technologies; physicochemical properties; standards, classification and certification; biochar effects when used as a soil amendment; biochar carbon persistence in soils, carbon accounting and climate change; and commercialization of the biochar industry.

The course contains 19 separate lessons—each with a subject overview, a recorded audio/video presentation lasting 30 – 45 minutes (some lessons contain more than one video), and a multiple choice quiz to test comprehension and retention. There is also an optional introductory presentation on the basics of biochar and the International Biochar Initiative so that all participants start the course with a common understanding of both. Course materials are presented in a user-friendly online format. Users can access the course at their own convenience during course periods, will proceed through two lessons weekly, 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.

IBI will launch the course in June, offering access to it, cost and registration information. Dues-paying IBI members will receive discounted course pricing.

New Biochar Terms and Definitions Published on IBI Website

Biochar is one of several different materials derived from thermochemical conversion processes. To help standardize terminology and reduce confusion, [IBI recently published a list of Terms and Definitions related to biochar on our website](#). The terms defined include: biochar, hydrochar, pyrogenic carbonaceous material (PCM), char, charcoal, ash, activated carbon, black carbon and soot. The definitions are adapted from the recently released second edition of [Biochar for Environmental Management](#).

New White Papers on Biochar and Organic Pollutants on IBI Website

IBI recently published two new white papers for IBI dues-paying members entitled: *Polycyclic Aromatic Hydrocarbons (PAHs) in Biochar: Total and Bioavailable Concentrations*; and *Remediation of Soils and Sediments Contaminated with Organic Compounds using Biochar*. These papers, authored by Gerard Cornelissen and Sarah E. Hale, researchers with the Norwegian Geotechnical Institute, provide a synopsis of the current state of research on these topics. [IBI members can login to read and download](#)

[these papers](#). To join IBI to view these white papers and other members-only resources, please see www.biochar-international.org/join.

June IBI Webinar Series Event: Josh Kearns presents: Low-cost water treatment using biochar

Biochar can be an excellent agent for treating water. On June 22nd, IBI welcomes Josh Kearns of Aqueous Solutions to address this interesting topic. While microbial pathogens typically represent the most immediate threat to human health, a wide variety of toxic organic chemicals—such as pesticides, pharmaceutical residues, industrial wastes, manufacturing additives, fuel compounds, and disinfection by-products—impact drinking water sources worldwide. In many rural, remote, and developing community circumstances, treatment using biochar adsorbent is an affordable and locally available option for the control of organic chemical contaminants. In this webinar, Mr. Kearns will discuss "low-tech" adsorbent biochar production from various feedstocks using small-scale devices such as gasifier cookstoves and drum ovens. He will also cover guidelines for integrating biochar adsorption in small, multi-barrier treatment systems that address biological and chemical concerns for water quality.



Mr. Kearns holds bachelor's degrees in chemistry and environmental engineering from Clemson University and a master's degree in environmental biogeochemistry from the University of California-Berkeley. He is currently a PhD Candidate at the University of Colorado-Boulder in environmental engineering, and a visiting researcher at North Carolina State University. His research explores the applicability of locally produced biomass char (biochar) as a low-cost adsorbent for drinking water treatment in developing communities. He is also the Director of Science for Aqueous Solutions (link to aqsolutions.org), a non-profit organization based in Thailand and the US promoting livelihood security, environmental and economic sustainability, and local self-reliance through appropriate technologies in water, sanitation and hygiene (WASH).

[Registration for this IBI webinar is open now](#). The webinar will be held on Monday, June 22nd at 18:00 GMT (which is 2:00p.m. Eastern Time or the local time in New York City). Note: Please convert the 2:00p.m. ET start time to your [local time by using this time converter tool](#). You must be a dues-paying member to participate in these special events. If you are not an IBI member and would like to join, [please click here](#). For more information on this webinar program, including links to prior presentations, please see: http://www.biochar-international.org/webinar_series.

New IBI Business Member: Community Power Corporation

A listing of all current IBI [Business](#) and [Organization](#) Members can be found on our website. For more information on membership opportunities and benefits, or to join, please see: <http://www.biochar-international.org/join>. Please note, Business and Organization descriptions are submitted by each individual entity, and are not developed or written by IBI.

Community Power Corporation

Over the past 16 years, [Community Power Corporation](#) has developed and is now producing patented, state-of-the-art, turn-key, modular, BioMax® 100 systems for the downdraft-gasification of biomass to produce power and biochar. These continuously operated systems are fully automated and do not require an operator to be in attendance full time.



There are no tarry or aqueous effluents for disposal, and the gaseous spark-ignited engine emissions meet Federal requirements (40 CFR Part 60 JJJJ) and those of the local California air-quality control districts. These tightly controlled systems create a very reproducible biochar product, using sustainable, renewable biomass feedstocks.

Five of these systems are currently operating in North Central California to produce high quality, 3/8"-minus biochar from tree-nut shells, e.g., walnut shells. Additional agricultural byproducts will be utilized in the future. Contact James Tan (itan@gocpc.com) or Dusty Duncan (dduncan@gocpc.com) for biochar sales and BioMax® system sales.

Profile: Development of a Mobile In-field Batch Pyrolysis Unit

By Russell Burnett and Stephen Joseph

In Australia where biomass resources are widely dispersed, the cost of collection and transporting biomass to central plants for processing is expensive. For biomass that is classified as an invasive species or biomass that has been infected by pathogenic micro-organisms, governments often forbid transportation for biosecurity reasons. Additionally, some governments prevent residue burning in rural areas, while others are introducing similar regulations.

To better utilize biomass and residues while meeting local emissions regulations, Dr. Stephen Joseph looked into the viability of a small portable production unit that could convert both woody feedstock and crop residues into biochar for wide application in rural areas of both developed and developing countries. Dr. Joseph asked Mr. Russell Burnett of Biochar Energy Systems Pty to design and manufacture a small biochar production unit for initial testing at a biochar training workshop held in rural Victoria, Australia. The initial set of testing was successful (the emissions proved to be within the desired limit of less than 100ppm of carbon monoxide (CO) and nitrous oxide (NOx)). Mr. Burnett and Dr. Joseph then worked on a design that could produce approximately 100kg of biochar in 2 – 3 hours from a mixed feedstock. The unit is designed to be pulled around on farms, or from property to property, by either a small tractor or pick-up truck.

To read the remainder of this article, please see:

http://www.biochar-international.org/profile_mobile_unit_Australia

Biochar Briefs: News Roundup for May

We update the website weekly with new articles on biochar. For more information, please see:

<http://www.biochar-international.org/newsbriefs>.

India

[A four-member team is working to provide affordable electricity and biochar in villages in Uttar Pradesh.](#)

The project, *Oorja*, will utilize the abundant agricultural residues (mainly rice husks) from farmers to co-produce electricity, household cooking gas, and biochar. The production plants will be owned and operated by franchisees who can then sell electricity to the villages and the biochar to farmers.

Philippines

[Dr. Ricardo Orge at the Department of Agriculture Philippine Rice Research Institute \(PhilRice\)](#) recently developed a continuous rice hull (CtRH) carbonizer for the cogeneration of biochar and heat from rice hulls. As the unit processes rice hulls into biochar, it generates heat that can be used in a high-volume cooker, a baking oven, as a sterilizer for mushroom fruiting bags, or to heat brooding chicks.

Spain

[Researchers from the Polytechnic University of Madrid \(UPM\) are investigating](#) the benefits of biochar produced from chicken, cattle, and pig manure. The study looks into not just the agricultural benefits of adding biochar to soils, but the overall reduction in carbon dioxide emissions from direct land application of livestock waste.

Opportunities in Biochar

- Participate in a worldwide biochar-making event, CHARdays 2015, June 18 – 21 and submit your project information for sharing; read more at <http://www.biochar-journal.org/en/ct/60-CHARdays-2015>
- Propose a special session for the upcoming Asia Pacific Biochar Conference 2016; for more information, see <http://www.biochar.co.kr/>
- Take advantage of a free subscription to Biomass Magazine. More information is available at <http://www.biochar-international.org/node/5537>.
- Download the open access biochar book: *Biochar Culture*, by Dr Sai Bhaskar Reddy Nakka. The text highlights the use of biochar in communities and its potential for increased sustainable agriculture in smaller scale farmsteads and homes, focusing on work in India. The book can be accessed at <http://www.biocharculture.com>.
- Job postings in biochar (as well as research/educational opportunities) can be accessed at <http://www.biochar-international.org/network/jobs>.
- Looking for potential grant funding? Check out the Terra Viva Grants Directory which develops and manages information about grants for agriculture, energy, environment, and natural resources in the world's developing countries at <http://www.terravivagrants.org/Home>.

Upcoming Calendar Events

- May 30: African Biochar Expert Group Project; first meeting. Location: Potsdam, Germany. For more information: <http://www.biochar-international.org/node/6748>
- May 28 – 29: Biochar – Contribution to Sustainable Agriculture. Location: Potsdam, Germany. For more information: <http://www.biochar-international.org/node/5510>
- June 1 – 4: 23rd European Biomass Conference and Exhibition. Location: Vienna, Austria. For more information: <http://www.biochar-international.org/node/5361>
- June 6: Biochar Demo Day at Rey Center. Location: Waterville Valley, NH, US. For more information: <http://www.biochar-international.org/node/6749>
- June 18 – 21: CHARdays 2015. Location: worldwide. For more information: <http://www.biochar-international.org/node/6754>
- June 23: Compost and biochar safety, economy and EU law harmonization conference. Location: Brussels, Belgium. For more information: <http://www.biochar-international.org/node/6656>
- June 24 – 27: Biochar: a sustainable solution for agriculture and environment at BiocharEXPO 2015. Location: Milan, Italy. For more information: <http://www.biochar-international.org/node/5950>
- July 5 – 10: Soil interfaces for sustainable development (with colloquium on Biochar in Agriculture and Environment). Location: McGill University, Montreal, Quebec, Canada. For more information: <http://www.biochar-international.org/node/6250>
- July 27 – 31: Stove Camp 2015. Location: Aprovecho Campus, OR, US. For more information: <http://www.biochar-international.org/node/6745>
- Aug 18 – 20: The 4th China International Biomass Energy Exhibition 2015. Location: Guangzhou, China. For more information: <http://www.biochar-international.org/node/6654>

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

Recently Published Biochar Research

IBI tracks all published research on biochar and includes it in our [online bibliography](#). The following articles were added in the last month. Please visit the website bibliography for more information on any of these articles. Due to copyright infringement laws, we cannot provide full copies of articles unless we have permission from the publisher. If you have published work that is not included, [please email us](#).

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