



## July 2011 News from the International Biochar Initiative

27 July 2011

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### IBI Announces New Membership Category: Business Members

Based on feedback from our membership looking for opportunities to support IBI and highlight their work, IBI is pleased to announce our new Business Membership category, and our first Business Members. Business Memberships provide the opportunity for organizations to share more of their unique offerings with IBI's robust membership – including a feature in IBI's monthly newsletter, sharing an expanded profile in our member directory, a full listing in a searchable business directory (next month) and having their company logo along with a few sentences about what makes the business special and relevant to our members on the IBI website at:

<http://www.biochar-international.org/IBI-business-members>.

We are pleased to announce our inaugural business members: Soil Reef and Three Dimensional Timberlands, LLC.

If your organization is interested in a business membership, please contact Thayer Tomlinson at [info@biochar-international.org](mailto:info@biochar-international.org) for more information. Business memberships are US \$500 annually.

**Soil Reef** brand is a product of an up-and-coming biochar research and production company that seeks to achieve widespread sustainable implementation of whole-system biochar technology. The team of academics, scientists, horticulturists and farmers that operate Soil Reef are based out of Berwyn, Pennsylvania, United States. For more information, please see: <http://www.soilbiochar.com>



**Three Dimensional Timberlands (3DT)**, based in Curry County, Oregon (United States), is developing a global network of biomass pyrolysis facilities that will convert timber waste and logging residue into carbon neutral replacements for fossil-fuel based products. For more information, please see: <http://threedimensionaltimberlands.com>



THREE DIMENSIONAL TIMBERLANDS, LLC.

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### Biochar Characterization Standards Update

IBI's initiative to create transparent, globally-developed and accepted standards for biochar characterization, production, and utilization has completed its first phase. We have summarized the final conclusions of the three Working Group conference calls, and produced a revised draft of the Biochar Product Definition and Standard (version 3). Using this revised

draft, we are holding a live discussion, combining a small sub-group of our conference call working groups with some fresh opinions from the larger biochar-producing community. The live working group is meeting this week to discuss the documentation in further detail, and decide the test methodologies and reporting expectations for all class levels of IBI Certified Biochar. The resulting document from this discussion will be provided to the IBI and the biochar community for a public commenting period before it is instituted as an IBI-run program.

The end product of this effort is the establishment of biochar standards developed in a global, transparent, scientifically-based process. The goal in this particular phase of the work is to produce a universally developed characterization and standards document that any of the IBI members or member organizations can utilize as a basis for governmental and third-party certification agencies to develop national biochar standards. Ultimately, IBI will be developing its own biochar material certification program based on these standards. The third version of the standards draft and all other updates are available at: <http://www.biochar-international.org/characterizationstandard>. We welcome all comments and suggestions from the biochar community as we proceed with development of these critical standard! s.

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## Profile: Three Dimensional Timberlands – Sustainable Biomass Pyrolysis Using Forestry Waste

A new start-up biomass pyrolysis company is building its first pilot plant on the forested coast of southwest Oregon in the United States. Three Dimensional Timberlands (3DT) is purchasing a former timber mill site where they will construct a three-ton-per-hour fast pyrolysis unit. Access to appropriate feedstocks is one reason for the Oregon location. The fast pyrolysis used by 3DT produces significant quantities of biochar along with bio-oil. The plant should be up and running in nine months, and after proving the feasibility of the technology in operational mode, the group has immediate plans for two additional plants in Oregon with long term plans for expansion both within the US and globally.



3DT's vision and strategy is both global and local.

Globally they wish to contribute to the mitigation of climate change while helping the world grapple with the dually compounding problems of expanding population and concurrently dwindling food production. Nationally and locally they want to help the United States move toward energy independence, help states meet their Renewable Energy Portfolio Standards, and help improve local economies where their facilities are located.

Click here for the remainder of this story:

[http://www.biochar-international.org/three\\_dimensional\\_timberlands](http://www.biochar-international.org/three_dimensional_timberlands)

Photo: Pyrolysis condensates recovery system; courtesy of 3DT

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## Profile: Control Laboratories Inc – Biochar Testing Pioneers

Frank Shields is interested in just about anything that has to do with the environment and the chemistry of soil, water, and biomass. During his 35-year career as an environmental chemist working for Control Laboratories, Inc. in Watsonville, California (United States), he has encountered plenty of variety to keep his interest fresh as the issues around resource use change over time.



Shields discovered biochar as a new, interesting research topic a few years ago at a compost conference. Shortly thereafter, the community of biochar researchers and experimenters discovered Control Laboratories, Inc. and started sending him their biochar to test. Shields estimates that he has tested biochar for about 50 different customers. He has also made his own biochar in a GEK (Gasifier Experimenters Kit) from All Power Labs and in the lab in a muffle furnace. He is doing his own plant growth experiments and experiments to see how biochar can be used to break up clay soils and improve drainage. Another specific interest is finding ways to turn sewage treatment bio-solids into biochar to control odors and to destroy pathogens and pharmaceutical residues.

Click here for the remainder of this story:  
[http://www.biochar-international.org/control\\_lab\\_profile](http://www.biochar-international.org/control_lab_profile).

Photo: Shields with equipment to test soil-biochar and compost-biochar mixes to determine changes that take place at given temperatures and time. The out gas is monitored in the air moving through the material; courtesy of Frank Shields

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## Biochar Briefs - News Roundup for July 2011

We update the website daily with new articles on biochar. For more information, please see:  
<http://www.biochar-international.org/newsbriefs>

**The Asian Development Bank (ADB) will help the Greater Mekong Subregion (GMS) scale up the use of biomass waste in the agricultural sector to meet its growing need for clean energy and food security for poor rural households.** The project will fund pilot investment projects to scale up biomass technologies such as household biogas systems, biochar kilns, and improved cooking stoves.

**The US Department of Agriculture is funding a \$1 million study over five years by North Dakota State University to investigate a feedstock production system to produce bio oil and biochar.** The study will characterize and test biochars for agronomic benefits as an integrated part of the feedstock production system.

**A new \$40 million initiative by the Bill & Melinda Gates Foundation will help develop futuristic toilets that transform human waste into usable electricity and fuel.** One of the 2011 grantees is the team of Brian Von Herzen of the Climate Foundation and Stanford University's Reginald E. Mitchell who are building a prototype community-scale charcoal production plant in Kenya that can process two tons of human bodily waste daily.

**US physicist Michael Smith has designed and is building the first commercial-scale Green Power House near Columbia Falls, Montana.** The closed loop system called Algae Aqua Culture Technology (AACT) will take waste products and turn them into biochar while producing

energy. The commercial-scale Power House resembles a modern tepee or yurt, with eight pie-shaped sections for algal tanks meeting in center control stations.

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## BEF Stove Camp in Uganda short report: First African TLUD Stove Camp

The first African 'Stove Camp' took place in Uganda with a focus on gasifier stoves. The camp was hosted by the Centre For Research in Energy and Energy Conservation (CREEC) at their facilities on the Campus of Makerere University in Kampala from 20-24 June 2011. On behalf of the Biomass Energy Foundation, Paul 'Dr. TLUD' Anderson from the US and Christa Roth from Germany shared their knowledge on gasification and its application for cooking purposes with 26 participants from Uganda, Kenya, South Africa, and Mozambique.



The first day was devoted to general introductions and practical experiments, so that the participants could see the practical application of the theoretical concepts for themselves. Many found the complicated theory easy to literally 'grasp' and understand. What made this camp special was the enthusiasm of the participants that created the extraordinary spirit at the camp: from the second day onwards everybody got their hands dirty and got involved in building devices, lighting them, making charcoal briquettes from the biochar produced in the TLUD gasifiers, and all sorts of other experiments.

One of the objectives of the camp was to come up with solutions that can be used for cooking and not only to burn biomass and make biochar. Quite a number of interesting designs emerged, including a removable TLUD-top placed on a charcoal stove that makes its own biochar for cooking. The use of the biochar in soil was not the key focus, instead the focus was on the efficient and clean use of solid biomass fuels in cookstoves.

For more information and photos on this conference, please see:  
<http://www.biochar-international.org/uganda/stovecamp>

Photo: stove camp participants; courtesy of Paul Anderson

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## Opportunities in Biochar

*Opportunities in Biochar* showcases announcements for the public to apply for funding, jobs, publications, conferences, etc. These announcements are also posted on the IBI website in two places: [Biochar Updates](#) and the [Member Bulletin Board](#).

*Submit abstract for conference:* The European Biochar Symposium 2011 will be held in Halle/Saale, Germany September 26 – 27th. **Abstracts in English are accepted through August 1, 2011** (with preference to early submissions). More information is available at: [www.landw.uni-halle.de/biochar2011](http://www.landw.uni-halle.de/biochar2011).

*Submit abstract for conference:* The Pyrogenic Carbon: Modern cycling and Paleo-environmental Applications session at the 2011 Fall AGU meeting (San Francisco, CA, USA) is **accepting applications for presentations through August 4, 2011**. More information is available at:

<http://www.biochar-international.org/node/2661>.

*Submit abstract for conference:* The Biochar Symposium at the EuroSoil 2012 Conference (Bari, Italy): will be held July 2 – 6, 2012. **Abstract deadline is Oct. 10, 2011.** More information is available at:  
<http://www.biochar-international.org/node/2623>.

New job opportunities and PhD postings are updated at:  
<http://www.biochar-international.org/network/jobs>

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## Upcoming Calendar Events

July 30: One Day Stove Building Workshop (SeaChar); Location Seattle, WA, United States; more information:  
<http://www.biochar-international.org/node/2692>.

August 7 – 12: 2011 BEF Camp at NESFI (New England Small Farm Institute): Gasifier Stoves, Biochar, CHAB (Combined Heat and Biochar), and More...; Location Belchertown, Massachusetts, United States; more information <http://www.biochar-international.org/node/2594>

August 28 – September 1: 242nd ACS National Meeting and Exhibition (featuring session: Black Carbon and Biochar for Soil Fertility and Carbon Sequestration); Location Denver, CO, United States; more information <http://portal.acs.org>.

August 30 – September 1: Farm Progress 2011; Location Decatur IL, United States; more information <http://www.farmprogressshow.com/main.aspx>.

September 7 – 9: Global Soil Partnership (GSP) for Food Security and Climate Change Adaptation and Mitigation Launch; Location Rome, Italy; more information <http://www.biochar-international.org/node/2470>.

September 15 – 18: 2nd Asia-Pacific Biochar Conference (APBC2011); Location Kyoto, Japan. Register now; more information (and registration): <http://apbc2011.com>.

September 20 – 23: Biochar and New Green Agriculture in China; Location Nanjing, China; more information  
<http://www.biochar-international.org/node/2568>

September 26 – 27: European Biochar Symposium 201; Location Halle/Saale, Germany; more information <http://www.biochar-international.org/node/2468>

September 26 – 30: Stove and CHAB Camp (Combined Heat and Biochar); Location Zamorano University, Honduras; more information: <http://www.biochar-international.org/node/2205>

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).

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## Regional Biochar Group Updates

To read more on regional and national biochar groups, please see IBI's website at: [www.biochar-international.org/network/communities](http://www.biochar-international.org/network/communities). This month features updates from the Mongolian Biochar Initiative (MoBI) and CAU-Biochar (China).

### The Mongolian Biochar Initiative (MoBI)

MoBI participants have been working on the performance of the UB JR 200 I Natural Draft TLUD Oven (a 200 liter biochar oven). They feel that good low tech units in this size range will prove to be the 'work horse' units utilizing thinly distributed feedstock for biochar production in sustainable rural development for timely climate change mitigation. The large amount of biomass consumed in the external heating of the retort oven lead them to begin thinking of the possibility of developing an efficient 200 I TLUD to produce biochar.

Fortuitously, John Rodgers' TLUD highlights this type of system. They have added upgrades to the air control system, while still keeping it low-tech and simple to construct and use. For additional information and detailed pictures contact [Karl Frogner](mailto:Karl.Frogner@biochar-international.org) or see the full update at: <http://www.biochar-international.org/regional/mongolia>.



Photo: Burn line 20 min after spreading starting fire coals and putting afterburner/chimney in place. (Coals were spread approximately 10 min after igniting starting fire.) Note the smokeless burn; courtesy of Karl Frogner.

### China Agricultural University (CAU)-Biochar

CAU-Biochar has just announced that an upcoming conference entitled the 4th International Biochar Congress; Biochar: Road to Richer Food and Safer Environment will take place in Beijing September 16 – 20, 2012. The host and primary organizer will be the China Agricultural University accompanied by co-organizers the China Academy of Agricultural Science (CAAS), IBI, the China Academy of Science (CAS), the China Academy of Forest Science (CAFS), the Soil Science Association of China (CSSS), and the China Biochar Network for Agricultural and Environmental Management (CBN).

For more conference information, please see: <http://www.biochar-international.org/node/2693>

For more information on China-CAU Biochar, please see: <http://www.biochar-international.org/regional/china>

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## Recently Published Biochar Research

IBI tracks all published research on biochar and includes it in our online bibliography: [www.biochar-international.org/biblio](http://www.biochar-international.org/biblio). 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, 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 at: [info@biochar-international.org](mailto:info@biochar-international.org).

Christianson, Laura, Hedley Mike, Camps Marta, Free Helen, and Saggar Surinder (2011). Influence of Biochar Amendments on Denitrification Bioreactor Performance.

Covell, Phil, Gammie Gena, Hunt Suzanne, Brunjes Lopa, Ng Fai, Nees Dan, Incubator Forest Trends/Katoomba, and Room Carbon War (2011). Advancing Biochar in the Chesapeake: A Strategy to Reduce Pollution from Poultry Litter. 07/2011.

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Duku, Moses Hensley, Gu Sai, and Hagan Essel Ben (2011). Biochar production potential in Ghana—A review. *Renewable and Sustainable Energy Reviews*. Volume 15. p.3539– 3551.

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Torres-Rojas, Dorisel, Lehmann Johannes, Hobbs Peter, Joseph Stephen, and Neufeldt Henry (2011). Biomass availability, energy consumption and biochar production in rural households of Western Kenya. *Biomass and Bioenergy*. 06/2011.

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Yadav, Sarita and Tyagi, D (2011). Equilibrium and Kinetic Studies on Adsorption of Aniline Blue from Aqueous Solution onto Rice Husk Carbon. *International Journal of Chemistry Research*. 05/2011; Volume 2, Number 3.