**Expression of Interest**

**International Training Course on Biochar Production, Testing and Utilisation.**

Nanjing Agricultural University in collaboration with the University of New South Wales and Newcastle University is considering holding an International Training Workshop if there is sufficient numbers of people who wish to attend.

We are asking for expressions of interest.

1. Target Audience

This training course will target the following groups of people.

* Decision makers in organisations who wish to develop policies and programs at national or regional level,
* Project managers who are designing and/or implementing either R and D, demonstration of commercial projects
* Senior extension personnel in agricultural and low carbon technology sector
* Owners or senior executives who are or have set up an enterprise that includes the manufacture of biochar or biochar related products.

1. Location

Nanjing Agricultural University, Nanjing, Jiangsu, China

1. Timing

Sept 10th to 15th

1. Duration and Format

6 days.

Lectures and discussion will be held in the morning and testing and practicals in the afternoon.

A field trip to a pilot field trial will be organized.

1. Cost and numbers.

Participants from developing countries will not be charged a tuition fee but will have to pay their airfare, food and accommodation.

Participants from developed countries and China are requested to pay a registration fee of EU350 for NGO’s and EU750 for commercial business and organisations. They are responsible for the airfare, accommodation and food.

The registration fee is to cover cost of accommodation, airfare and food of trainers.

A training certificate will be issued by the end of the course.

Maximum number of participants 30

1. Content
2. Introduction
   * Opening address: International representatives, and the local host
   * Brief presentation by participants and trainers
   * Definition of biochar and characteristics
   * The terrestrial global carbon cycle
   * Historical use of charcoal as soil amendment
3. The Science of Biochar and Soil

* A review of the scientific literature and assessment of areas of uncertainty on:
  + Biochar and C sequestration in soil
    - Stability of biochar vs. original feedstock
    - Positive and negative carbon mineralisation priming effects
  + Biochar as soil amendment
    - Availability of nutrients in biochar
    - Biochar and soil nutrients
      * Cation retention
      * Nitrogen immobilisation
    - Effect of biochar on soil physical properties
    - Effect of biochar on non-CO2 GHG emissions
    - Biochar and soil health
    - Biochar-organo-mineral interactions
    - Biochar and root growth
    - Biochar and plant yield
  + Other uses of biochar
    - Biochar as filter for wastewater treatments
    - Biochar in soil remediation
    - Animal husbandry and fish production

1. The Science and Engineering of Biochar Production and Application to Soil

* Process conditions affecting biochar properties
* Effect of type of feedstock on biochar properties
* A review of technology from large scale continuous units to small scale units
* Post-treatments and formulations of blends
* Biochar delivery to soils
* Matching biochars to soil types and plant nutrient requirements.

1. Testing and Certification of Biochar Characteristics, Biochar Application and Biochar Production

* IBI Guidelines for Specifications of Biochars for Use in Soil
* IBI documents on sustainability of biochar production, testing of pyrolysis technology and application to soils

1. Designing, Implementing, Monitoring and Evaluating Biochar Programs; A Systems Approach.

* The potential of biochar as part of sustainable food production, increase of local income and generation of renewable energy. Case studies:
  + Sanli New Energy Company, China
  + Shanxi Gongxiao Coperative, China
* Complying with local regulations and certification guidelines
* Understanding the System(s) where the project(s) are to be implemented to determine needs, resources and vulnerabilities.
  + The importance of baseline data
  + sustainable livelihood approach
* Developing objectives and criteria
* Outline of the project components, timing and resourcing
* Choosing technology and specification of end products
* People and training requirements
* Monitoring and evaluation;

1. Developing Biochar Businesses

* Developing a business plan
* Barriers in the development stage and strategies for overcoming these barriers
* Financing
* Choosing markets
* Product development
* Technology development or selection

**Practical Exercises**

1. Making biochar in a Chinese pyrolyser. Testing its performance.
2. Carrying out basic biochar tests using techniques developed by different organisations. View of the Nanjing University test facilities
3. Developing formulations for your particular project/business location
4. Setting up a field experiment. Visiting Nanjing University field site
5. Developing a specific plan for either a biochar project or a business
6. Interactive discussions on issues of relevance

**Applying for a Position**

Could you please provide the following information when sending your expression of interest in the course.

A curriculum vitae (CV)

In a word document

a) Why do you want to come to the course?

b) What do you expect to get from the course?

c) How will you use the information and experience that you gain?

d) Sources of funding for your airfare and accommodation

Please send this information to

Professor Genxing Pan; gxpan@njau.edu.cn

Professor Stephen Joseph; joey.stephen@gmail.com