Preliminary Program
(May 17, 2017)

Biochar: Production, Characterization and Applications

August 20-25, 2017
Hotel Calissano
Alba, Italy

Conference Co-Chairs:

Franco Berruti
Western University, London, Canada

Ondrej Masek
University of Edinburgh, Edinburgh, UK

Raffaella Ocone
Heriot-Watt University, Edinburgh, UK

Engineering Conferences International
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**Sunday, August 20, 2017**

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<tr>
<td>16:00 – 18:00</td>
<td>Registration</td>
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<td>17:00 – 18:00</td>
<td>Organizing Committee Meeting</td>
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<td>18:00 – 19:30</td>
<td>Welcome Reception</td>
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<td>20:00 – 21:30</td>
<td>Welcome and Dinner</td>
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**NOTES**

- **Audiotaping, videotaping and photography of presentations are prohibited.**

- **Speakers** – Please have your presentation loaded onto the conference computer prior to the session start (preferably the day before).

- **Speakers** – Please leave at least 3 minutes for 1 question. Extended discussion will take place at the poster session.

- **Please do not smoke at any conference functions.**

- **Turn your cellular telephones to vibrate or off during technical sessions.**

- **If you notice an error in your listing in the Participant List, please login to your ECI account and correct the error.**

- **There will be organized excursions by bus to visit interesting sites as well as to visit olive oil and wine production facilities in the region.**
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<tr>
<th>Time</th>
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<tr>
<td>07:30</td>
<td>Breakfast</td>
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<tr>
<td>08:15</td>
<td>Welcome and Conference Overview</td>
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<td>08:30</td>
<td><strong>PLENARY or KEYNOTE – TBA</strong></td>
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<tr>
<td>09:00</td>
<td>Thermocatalytic-Reforming (TCR®) and TCR®-biochar properties</td>
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<td></td>
<td>Markus Heberlein - Fraunhofer Institute for Environmental, Safety, and</td>
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<td>Energy Technology UMSICHT, Germany</td>
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<tr>
<td>09:15</td>
<td>Autothermal biochar production and characterization at pilot scale</td>
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<td></td>
<td>Andrea M. Rizzo - RE-CORD, Italy</td>
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<td>09:30</td>
<td>Woody and agricultural biomass diversity in torrefaction: a complete</td>
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<td></td>
<td>study in solid conversion and volatiles formation on TGA-GCMS</td>
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<td></td>
<td>María González Martínez - CEA Grenoble, LGC - INP Toulouse, France</td>
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<tr>
<td>09:45</td>
<td>Production and characterization of slow pyrolysis biochar from lignin-</td>
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<td></td>
<td>rich digested stillage from 2nd generation bioethanol production –</td>
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<tr>
<td></td>
<td>Frederik Ronsse - Ghent University, Belgium,</td>
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<tr>
<td>10:00</td>
<td>Catalytic studies on the thermal degradation of biomass for a direct</td>
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<td>biomass fuel cell system</td>
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<td>Alfredo Bonaccorso - University of St Andrews, UK</td>
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<td>10:15</td>
<td>Coffee Break</td>
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<tr>
<td>10:45</td>
<td>Understanding and controlling the smoldering process</td>
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<td></td>
<td>Paolo Canu - University of Padua, Italy</td>
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<td>11:00</td>
<td>Biochar production through slow pyrolysis of different biomass materials:</td>
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<td></td>
<td>Seeking the best operating conditions</td>
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<td>Joan J. Manya - University of Zaragoza, Spain</td>
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<tr>
<td>11:15</td>
<td>Investigation of innovative and conventional pyrolysis of ligneous and</td>
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<td>herbaceous biomasses for biochar production</td>
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<td>Silvia Fiore - Politecnico di Torino, Italy</td>
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<tr>
<td>11:30</td>
<td>Pyrolysis of residues from well-established biochemical processes for</td>
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<td>the production of biochar</td>
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<td></td>
<td>Devon Barry - ICFAR, The University of Western Ontario, Canada</td>
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<tr>
<td>11:45</td>
<td>Biochar production and application in the Intermountain West</td>
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<td>Darren McAvoy - Utah State University, USA</td>
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<tr>
<td>12:00</td>
<td>Valorization of char from small scale gasification systems in South-</td>
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<td>Tyrol</td>
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<td>Marco Baratieri - Free University of Bolzano, Italy</td>
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<tr>
<td>12:15</td>
<td>How to produce a potential high value bio-char from the worst invasive</td>
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<td>plant in Canada</td>
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<td>Chiara Barbiero - ICFAR, The University of Western Ontario, Canada</td>
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<tr>
<td>12:30</td>
<td>Biochar – Product development in remote regions from mixed residues</td>
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<td>Kelly Hawboldt - Memorial University, Canada</td>
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</tbody>
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12:45 – 13:00  (141) Biochar production through sustainable biorefineries
Anastasia Zabaniotou - Aristotle University of Thessaloniki, Greece

13:00 – 14:00  Lunch

14:00 – 17:00  Free time / ad hoc sessions

17:00 – 17:30  Afternoon refreshments

17:30 – 17:45  (140) Production of activated carbon from barley biochar precursor
Javier Pallares Ranz - University of Zaragoza\CIRCE Research Institute, Spain

17:45 – 18:00  (147) Activation and mild oxidation of vacuum pyrolysis biochar
Serge Kaliaguine - Université Laval, Canada

18:00 – 18:15  (103) Development of CO₂ neutral reductants in metallurgical industry from
thermochemically produced biochar
Anna Trubetskaya – LTU, Sweden

18:15 – 18:30  (C) Biochar Production with CarbonFX Technology
Sylvain Bertrand - Airex Energy, Canada

18:30 – 18:45  (121) Activated biochar derived from marine macroalgae wastes (Enteromorpha prolifera): Facile synthesis and its application on toxic dye removal
Xiaoyu Li - China University of Petroleum, China

18:45 – 19:00  (108) Bio-charcoal production from municipal organic solid wastes
Salam Bash AlMaliki - AlKarkh University of Science, Iraq

20:00 – 21:15  Dinner

21:15 – 22:30  Poster Session with Social Hour
Tuesday, August 22, 2017

07:30 – 08:15  Breakfast

08:15 – 08:45  PLENARY or KEYNOTE – TBA

08:45 – 09:00  (124)  Lab-scale pyrolysis and hydrothermal carbonization of biomass digestate: Characterization of solid products
Edoardo Miliotti - CREAR/Department of Industrial Engineering, University of Florence, Italy

09:00 – 09:15  (104)  Thermal evolution of biochar and its physicochemical properties during hydrothermal gasification
Janusz A. Kozinski - Lassonde School of Engineering, York University, Canada

09:15 – 09:30  (154)  Production of biochar and development of predictive methods for determining performance in value-added composite materials
Douglas Matthew Cuthbertson – ICFAR, Western University, Canada

09:30 – 09:45  (177)  Characterization of biochar pore structure with X-ray tomography
Jari Hyväläluoma - Natural Resources Institute Finland (Luke), Finland

09:45 – 10:00  (188)  Changes in carbon structure distribution and nanostructure of functionalized biochars
Elsa Weiss-Hortala - Rapsodee UMR CNRS, France

10:00 – 10:15  (179)  Biochar from gasification in cultivated soils and riparian buffer zones: chemical Characterization
Ivano Vassura - University of Bologna, Italy

10:15 – 10:45  Coffee Break

10:45 – 11:00  (110)  Characteristic studies on the waste biomass-based biochars produced by fast Pyrolysis
Ajay K. Dalai - University of Saskatchewan, Canada

11:00 – 11:15  (126)  Mobile organic compounds in biochar. Relationships with carbonization degree and bio-oil composition
Daniele Fabbri - University of Bologna, Italy

11:15 – 11:30  (152)  Biochar quality management
Ataullah Khan - InnoTech Alberta, Canada

11:30 – 11:45  (184)  Hydrothermal carbonization of sewage sludge: Char characterization and reference to international legislations
Fabio Merzari - University of Trento, Italy

11:45 – 12:00  (974)  Biochar characterization and EU27 las harmonization: REFERTIL results
Massimo Pugliese - University of Torino, Italy

12:00 – 12:15  (180)  Preparation, characterization and potential uses of biochars and hydrochars from pig manure waste
Gabriel Gascó - Universidad Politécnica de Madrid, Spain

12:15 – 12:30  (133)  Preparation and characterization of functionalized biochar via pyrolysis of woody biomass for environmental remediation
John Zhou - University of Technology Sydney, Australia
12:30 – 12:45  (183)  Physicochemical and hydrophysical properties of biochars and hydrochar from hydrothermal carbonization of sewage sludges
Ana Mendez - Universidad Politécnica de Madrid, Spain

12:45 – 13:00  (113)  Off-gassing of charred pellets during storage
Shahab Sokhansanj - BBRG – University of British Columbia, Canada

13:00 – 14:00  Lunch

14:00 – 17:00  Free time /ad hoc sessions

17:00 – 17:30  Afternoon Refreshments

17:30 – 17:45  (138)  Biochar from Waste: Production and Characterization
Anh Phan - Newcastle University, UK

17:45 – 18:00  (128)  Analysis of product distribution and characteristics of bio-oil and bio-char from fast pyrolysis of date palm tree waste
Yassir Makkawi - Department of Chemical Engineering, American University of Sharjah, United Arab Emirates

18:00 – 18:15  (114)  Physical properties of charred pellets after two months of storage
C.J. Lim - BBRG – University of British Columbia, Canada

18:15 – 18:30  (B)  Multi-Technique Characterization of Biochar Formation
Anthony Dufour - CNRS Nancy, France

18:30 – 18:45  (166)  Pyrolysis of cotton stalks and utilization of pyrolysis char for sustainable soil enhancement and carbon storage
Sebastian Schaffer - University of Natural Resources and Life Sciences, Vienna, Austria

18:45 – 19:00  (A)  Desulfurization and dezincification of char from pyrolysis of waste tires
Jamal Chaouki - Ecole Polytechnique de Montreal, Canada

19:00 – 19:15  (160)  Real time monitoring of biogas trace compounds with a biochar reactor using a dims technique
Davide Papurello - Politecnico di Torino, Italy

20:00 – 21:15  Dinner

21:15 – 22:30  Poster Session with Social Hour
Wednesday, August 23, 2017

07:30 – 08:15  Breakfast

08:15 – 08:45  **PLENARY or KEYNOTE – TBA**

08:45 – 09:00  (106) Biochars from various biomass types as anodes for sodium-ion batteries
Capucine Dupont – CEA, France

09:00 – 09:15  (120) Monolithic biochar as electrode in supercapacitor
Charles Q. Jia - University of Toronto, Canada

09:15 – 09:30  (186) Biochar for pollutant removal from aqueous solutions
Raffaella Ocone - Heriot-Watt University, UK

09:30 – 09:45  (150) Biochar and ash amendment effects on mine reclamation in the boreal forest
Jillian M.H. Bieser - University of Toronto, Canada

09:45 – 10:00  (161) Agronomic Benefits and Detriments of Using Biochar
Carlo Grignani – University of Turin, Italy

10:00 – 10:15  (172) Rapid removal of pharmaceuticals from wastewater using magnetized biochar from waste Douglas Fir
Akila G. Karunanayake - Mississippi State University, USA

10:15 – 10:45  Coffee Break

10:45 – 11:00  (142) Carbon sequestration using bio-refinery residues
Ondrej Masek - University of Edinburgh, UK

11:00 – 11:15  (135) Short-term effects of biochar on grapevine fine root dynamics and soil Microorganisms
Dalila Trupiano - University of Molise, Italy

11:15 – 11:30  (136) Biochar addition in the anaerobic digestion of the organic fraction of municipal solid waste for biogas production
Paola Giudicianni - CNR-IRC, Italy

11:30 – 11:45  (139) Biochar enhance cherry tomato plant growth, fruit yield and quality in controlled Conditions
Oriana Argentino - University of Insubria, Italy

11:45 – 12:00  (155) Charcoal (biochar) impact on soil carbon stocks, productivity and nutrient cycles of alpine grasslands
Irene Criscuoli - Foxlab Fondazione Edmund Mach, Italy

12:00 – 12:15  (175) Biochar for remediating contaminated soils: outdoor experiments in Wales, UK
F. Alayne Street-Perrrot - Swansea University, UK

12:15 – 12:30  (127) Biochar as cheap and environmental friendly filler able to improve polymer mechanical properties
Aamer Abbas Khan - Politecnico di Torino, Italy

12:30 – 12:45  (129) Treatment of non-coal minewater with low cost, slow pyrolysis biochar – establishing new pilot trials using alternative technologies
Alun L. James - Aberystwyth University, UK
12:45 – 13:00 (137) Standard Biochar as low-cost filler in cement-based composites
Luciana Restuccia - Politecnico di Torino, Italy

13:00 – 14:00 Lunch

14:00 – 17:00 Free time / ad hoc sessions

17:00 – 17:30 Afternoon Refreshments

17:30 – 17:45 (146) The effects of biochar as a soil amendment on soil quality and plant growth
Ok-Youn Yu - Appalachian State University, USA

17:45 – 18:00 (173) Potential use of olive mill wastewater in the production of biochar for a soil Amendment
Khouloud Haddad - Institut de Science des Matériaux de Mulhouse, France

18:00 – 18:15 (131) Biochar effect on the growth of Ailanthus altissima cultivated on a technosol mainly contaminated by Pb and As: mesocosm study
Domenico Morabito - LBLGC University of Orléans, France

18:15 – 18:30 (130) Effect of lightwood and pinewood biochar amendments on the growth and assisted phytostabilizing capacities of salix viminalis
Manhattan Lebrun - University del Molise, Italy

18:30 – 18:45 (145) Copper immobilization and mobilization by biochar and compost in different copper-enriched vineyard soils
Gerhard Soja - AIT Austrian Institute of Technology GmbH, Austria

18:45 – 19:00 (178) Adsorption of ammonium (NH4+) ions onto various Vietnamese biomass residue-derived biochars (wood, rice husk and bamboo)
Hien Nguyen - University of Birmingham, UK

19:00 – 19:15 (168) As(III) remediation from water using sustainable iron oxide-biochar composite
Prachi Singh - Jawaharlal Nehru University, India

19:15 – 19:30 (101) Use of fruit and vegetable waste based biochar for removal of heavy metals from aqueous solution
Zahoor Ahmad - University of Haripur, Pakistan

20:00 – 21:15 Dinner

21:15 – 22:30 Poster Session with Social Hour
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<td>08:15 – 08:45</td>
<td><strong>PLENARY or KEYNOTE – TBA</strong></td>
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<td>08:45 – 09:00</td>
<td>(116) Can Biochar link forest restoration with commercial agriculture? Kristin Trippe - USDA ARS Forage Seed and Cereal Research Unit, USA</td>
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<td>09:00 – 09:15</td>
<td>(170) Effect of biochar addition on carbon dioxide and nitrous oxide emissions from a temperate agricultural soil Maren Oelbermann - University of Waterloo, Canada</td>
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<td>09:15 – 09:30</td>
<td>(182) Effects of the application of manure biochars on the trace metal bioavailability in Riotinto area (Spain) Ana Mendez - Universidad Politécnica de Madrid, Spain</td>
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<td>09:30 – 09:45</td>
<td>(187) Developing a method of accounting for the material use of biomass/biochar and its positive side benefits within the company carbon footprint: A case study at Hochschule Geisenheim University Georg Ardissone - Hochschule Geisenheim University, Germany</td>
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<td>09:45 – 10:00</td>
<td>(132) Effect of wood biochar associated to compost on the phytotoxicity of a mining technosol mainly contaminated by Pb and As Romain Nandillon - IDDEA, France</td>
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<td>10:00 – 10:15</td>
<td>(148) Applications of high ash char derived from intermediate pyrolysis of municipal solid waste - a technical feasibility study Yang Yang - Aston University, UK</td>
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<td>10:15 – 10:45</td>
<td>Coffee Break</td>
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<td>10:45 – 11:00</td>
<td>(119) Pyrolytic temperature evaluation of macauba biochar for uranium adsorption from aqueous solutions Sabine Neusatz Guilhen - Instituto de Pesquisas Energéticas e Nucleares, Brazil</td>
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<td>11:00 – 11:15</td>
<td>(157) Arsenic removal from drinking water by means of low cost biochars derived from miscanthus and coconut shell Silvia Fiore – Politecnico di Torino, Italy</td>
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<td>11:15 – 11:30</td>
<td>(164) The influence of biochar on soil characteristics in a temperate agroecosystem Maren Oelbermann - University of Waterloo, Canada</td>
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<td>11:30 – 11:45</td>
<td>(176) Upgrading biochar characteristics by using CO2 as modifying agent for vanadium redox flow battery electrodes Ha Phan - Newcastle University, UK</td>
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<td>11:45 – 12:00</td>
<td>(151) Effect of two rates of biochars on arylsulfatase and beta-glucosidase activities in two soils from central Missouri, USA Maxim R. Bayan - Lincoln University in Missouri, USA</td>
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<td>12:00 – 12:15</td>
<td>(181) Modification of soil biochemical properties after urban waste biochar application Gabriel Gascó - Universidad Politécnica de Madrid, Spain</td>
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<tr>
<td>12:15 – 12:30</td>
<td>(105) Effect of biochar application rate, biochar production (pyrolysis) temperature and biochar feedstock type (rice husk/ maize straw) on amendment of clay-acidic soil</td>
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Brook Tesfamichael Teferra - Addis Ababa University, Ethiopia

12:30 – 12:45 (143) Effects of biochar application on total and nitrogen-fixing bacteria in rhizosphere and bulk soils
T. Komang Ralebitso - Senior Teesside University, UK

12:45 – 13:00 (111) Waterleaf (Talinum triangulare) response to biochar application in a humid-tropical forest soil
Samuel Fru Billa - University of Dschang, School of Agriculture and Environment, Cameroon

13:00 – 14:00 Lunch

14:00 – 18:30 Free Time + Excursion

20:00 – 22:30 Banquet
**Friday, August 25, 2017**

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<td>07:30 – 08:30</td>
<td>Breakfast</td>
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| 08:30 – 08:45 | Which policy for biochar deployment in southern Europe? An integrated approach is possible  
                  David Chiaramonti - RE-CORD/CREAR, University of Florence, Italy |
| 08:45 – 09:00 | Toward a long-term assessment of biochar impact in Mediterranean agricultural soils  
                  Silvia Baronti - IBIMET CNR, Italy                                       |
| 09:00 – 09:15 | Biochar economics and the competition for feedstock  
                  Roger Kilburn – IbioIC, UK                                               |
| 09:15 – 09:30 | Integrated energy and water self-sufficiency system for small Mediterranean insular villages: A feasibility study  
                  Oreste Piro - Universitat de les Illes Balears, Spain                   |
| 09:30 – 09:45 | Life cycle assessment of Biochar production from southern pine  
                  Sudhagar Mani - University of Georgia, USA                               |
| 09:45 – 10:00 | Behavioral factors affecting the adoption of biochar of farmers in Canada  
                  Maren Oelbermann - University of Waterloo, Canada                         |
| 10:00 – 10:30 | Coffee Break                                                              |
                  Maren Oelbermann - University of Waterloo, Canada                         |
| 10:45 – 11:00 | Use of biochar as soil health enhancer and climate change mitigator in India: Potential and constraints  
                  Goutam Kumar Ghosh - Visva-Bharati University, India                       |
| 11:00 – 11:15 | New carbon innovation for sustainable agriculture, soil remediation and water / effluent purification  
                  Marius van der Merwe – NewCarbon, South Africa                           |
| 11:15 – 13:00 | Poster Session for Thursday and Friday                                     |
| 13:00         | Lunch and Departure                                                       |