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Announcement

Build Africa: Bio-based and Recycling Resources Summer School – BioHome project

**“An educational and development contribution to the cooperation
with universities from developing and emerging countries”**

Friday 31st May – Friday, 14th June 2019

University Hamburg
Institute of Wood Science
Leuschnerstraße 91 c
21031 Hamburg, Germany

SCOPE

The German Federal Minister of Education and Research recently published the novel strategy to address urgent challenges in Sub-Saharan Africa (SSA). German and African stake-holders from education and science together defined areas of action such as: Transfer of knowledge and innovation in higher education, Young research cooperation for the achievement of the UN SDGs as well as Employability of graduates and practical hands on mentality in education.

Our Summer School "Build Africa: Bio-based and Recycling Resources" combines research topics regarding secondary (plastic, ashes) and bio based (wood, straw, bagasse) resources with educational aspects, such as e-learning and open educational resources (OER). The Summer School joins internationally renowned experts and postgraduates from Brazil, China, Ethiopia, Ghana, Nigeria and South Africa. We are especially pleased to welcome colleagues from UHH's strategic partners University of Sao Paulo and University of Stellenbosch.

Our aims for the Summer School "Build Africa: Bio-based and recycling resources" 2019 in Hamburg are:

- To promote scientific and technical cooperation among postgraduates
- To strengthen the hosting role of UHH as a strategic partner in South-South Cooperation
- To build a broad network of senior experts and postgraduates to advise their individual scientific projects
- To learn new methods together and to get to know the research infrastructure at UHH
- To diversify our knowledge and experience by using e-learning tools
- To strengthen UHH as a meeting campus for young researchers in the bio-economy field, especially bio-based and recycling composite materials for civil construction

We will work on five topic fields (see below). Each field provides input from a senior experts followed by impulse presentations from our postgraduates. The students will then work interactively and critically reflect their own thesis projects together with the experts and peers. Each participant will shortly present the state of work and explain difficulties and potentials of their work.

	TOPIC FIELD	MAIN CONTRIBUTORS
1	<p>Geopolymer Wood Composites – Building material of the future? <i>Geopolymers can base on secondary combustion by-products, such as fly- and bottom ash, biomass ashes and metallurgic slag. Combined with lignocellulose particles or fibres, the resulting light-weight composites can substitute cement-based concrete in civil construction. The advantages are: abundant resource stock, carbon sequestration and low technology level.</i></p>	<p>Prof. Dr. Holmer Savastano Jr. (University Sao Paulo, Brazil) Prof. Dr. Esayas Gebreyouhanes (Addis Ababa Institute of Technology, Ethiopia) Dr. Luvuyo Tyhoda (Stellenbosch University, South Africa)</p>
2	<p>Cascading thermoplastic waste in Wood Plastic Composites – To feed two birds with one grain? <i>Using thermoplastic wastes as a secondary resource in building materials might solve two problems at the same time. On the one hand, it can economically induce the removal of plastic waste from the environment; on the other hand, it helps reducing the import of virgin petro-based building products such as cladding, fencing, decking in SSA.</i></p>	<p>Prof. Dr. Andreas Krause (University Hamburg, Germany) Dr. Bernard Effah (Kumasi Technical University, Ghana)</p>
3	<p>Where does the woody resource come from and what substitution potentials does social housing offer? <i>Prior to any technological aspects, the question of resource availability, accessibility and quality comes up. A Mass Flow Analysis and Wood Resource Balance are successful scientific method sets for tracking resource pathways and modelling cascade cycles. Prof. Mantau gives a lecture on Mass Flow Analyses and the Resource Balance method. We will discuss on how these “wood” methods can be applied to thermoplastic waste, ashes and minor lignocellulose resources.</i></p>	<p>Prof. Dr. Udo Mantau (INFRO e.K., Hamburg, Germany) <i>tba</i></p>
4	<p>How do we develop eLearning modules and Open Educational Resources for curricula in our field? <i>The production of didactic eLearning material as open educational resources (OER) is a high priority topic in universities all around the globe. Together with Mr. Heinecke, expert for digitization in teaching at the MIN faculty of UHH, we will record video snippets with each participant. Furthermore, the participants will experiment with their mobile devices (e.g. smartphone) to produce low-threshold contents “on site”. In a hands-on training we will show how to develop digital scripts with #markdown.</i></p>	<p>Mr. Michael Heinecke (University Hamburg, Germany) Goran Schmidt (Thünen Institute, Germany)</p>
5	<p>Low-Technology levels – frugal innovation is a key driver for ecological industry development <i>Scientists, politicians and stakeholders agree that industrialization is the key to mass employment in SSA and hence to wealth, social security and education as well. A competitive circular bio-economy must either yield high-value bio-based products and/or use intelligent manufacturing processes with low (emission) and robust technology levels. We will look on existing solutions in example countries like India and discuss “backyard solutions” for complex products such as WPC or GWC.</i></p>	<p>Dr. Rajnish Tiwari (Technical University Hamburg Harburg) Prof. Dr. Andreas Krause (University Hamburg, Germany)</p>

SCHEDULE

Date	Topic	Venue
30-May	Short welcoming of postgraduate participants and transfer	Airport/Hotel
31-May	Day trip to LIGNA fair	Hannover Fair
1-Jun	Day off	n/a
2-Jun	Explore Hamburg! Visit Elbphilharmony, Townhall, Elbtunnel, St. Nikolai, Planten und Blomen	Hamburg city misc.
3-Jun	Geopolymer Wood Composites – Building material of the future?	Camps Bergedorf
4-Jun	Cascading thermoplastic waste in Wood Plastic Composites – To feed two birds with one grain?	Campus Bergedorf
5-Jun	PhD colloquium with contributions from the technology working groups of Uni Göttingen and UHH / BBQ!	Campus Bergedorf
6-Jun	PhD colloquium with contributions from the technology working groups of Uni Göttingen and UHH	Campus Bergedorf
7-Jun	Low-Technology levels – frugal innovation is a key driver for ecological industry development	Billbrook / Thünen Villa
8-Jun	Teambuilding in the laboratory kitchen - Surprise	Klinikweg 3, Hamburg
9-Jun	Day off	n/a
10-Jun	Day off	n/a
11-Jun	Where does the woody resource come from and what substitution potentials does social housing offer?	Campus Bergedorf
12-Jun	How do we develop eLearning modules and Open Educational Resources for curricula in our field?	Thünen Villa
13-Jun	How do we develop eLearning modules and Open Educational Resources for curricula in our field?	MIN Faculty Altona
14-Jun	Summary and questions / Concluding remarks / Feedback & Evaluation / Farewell	Thünen Villa
15-Jun	Departure	n/a

VENUE & TRANSPORT

The workshop will take place in Hamburg-Bergedorf, about 30 min away from Hamburg-City and 50 min away from the Hamburg-Airport with public transportation. Visiting Hamburg-City will be possible as a recreational activity. Travel arrangements to and from Hamburg will be made by the participants individually. During the event transportation will be organized.

CONTACT & FURTHER INFORMATION

We are currently working out the detailed schedule and hope to have raised your interest. In case, you want to participate or contribute our summer school, please send us a short notification to biohome.min@uni-hamburg.de or contact us via the Thünen Institute:

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Prof. Dr. Andreas Krause & Goran Schmidt

FUNDS & SUPPORT

The Federal Ministry of Education and Research supports the summer school through the BioHome project fund. The BMBF programme "Partnerships for Sustainable Solutions with Sub-Saharan-Africa-Measures for Research and Integrated Postgraduate Training and Continuing Training" is administered by: DAAD - German Academic Exchange Service and DLR - German Aerospace Center.

Additionally, the MIN Graduate School International funds international speakers, participants and catering services within their programme line "Promotion of international workshops"

The Thünen Institute provides premises and infrastructure for the summer school: Thünen Institute of Wood Research



DAAD



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