



ESBBC

PROGRAMME

1ST

EUROPEAN
SUMMER
SCHOOL ON
BIO-BASED
COMPOSITES

FROM PLANT & WOOD FIBRES TO ADVANCED COMPOSITES



ONLINE EVENT
6, 7, 8 OF JULY 2021

<https://events.femto-st.fr/ESBBC>

8:50 – 9:00 Welcome & introduction – Vincent Placet

9:00 – 9:20 Towards a more sustainable world – From film to hemp farming – Steve Barron - Chairperson: Darshil Shah

9:20 – 11:45 SESSION 1: Interactive Workshop on bio-based materials design, perception and emotional aspects - Chairperson: Fabrizio Scarpa

9:20 – 9:45 Presentation – Lecture/interview: Influence of processing on the physical and emotional properties of plant fibre-reinforced composites - Jörg Müssig, Tim Huber, Darshil Shah

9:45 – 11:15 Workshop: Perception of the quality and environmental friendliness of bio-based composites - Jörg Müssig, Tim Huber, Darshil Shah

11:15 – 11:30 Coffee break

11:30 – 11:45 Flash presentations

- Analyzing Material Perception Of Biocomposites To Enhance Desirability And Distinguishability - Manu Thundathil
- Natural Fibres as a Sustainable Reinforcement Constituent in Aligned Discontinuous Polymer Composites produced by the HiPerDiF Method - Ali Kandemir
- Laser transmission welding of short flax fiber reinforced thermoplastic composites - Rowshni Jabeen

11:45 – 12:30 Presentation of European projects - Chairperson: Chloé Joly

11:45 – 11:55 SSUCHY - Vincent Placet

11:55 – 12:05 FLOWER - Alain Bourmaud

12:05 – 12:15 NETFIB - Michel Chalot

12:15 – 12:25 FibreNet - Pasi Kallio

12:25 – 12:30 Q&A

12:30 – 13:30 Lunch break

13:30 – 17:30 SESSION 2: Plant and wood fibres - Chairperson: Aart Van Vuure

13:30 – 14:00 Keynote lecture: Overview of plant fibres for bio-based composite reinforcement; main specificities and key properties - Alain Bourmaud, Vincent Placet

14:00 – 14:15 Q&A, Quizz

14:15 – 14:45 Keynote lecture: Wood fibres - from their biological origin to their properties - Michaela Eder, Olivier Arnould

14:45 – 15:00 Q&A, Quizz

15:00 – 15:30 Coffee break

15:30 – 16:15 Mechanical testing of individual wood fibres: video/live demonstration - Pasi Kallio & FIBRObotics

16:15 – 16:45 Keynote lecture: Towards better knowledge of fiber cell wall : from biochemistry to the properties of plant walls, main lines and variables - Arnaud Day, Johnny Beaugrand

16:45 – 17:00 Q&A, Quizz

17:00 – 17:30 Flash presentations

- Combined experimental and numerical approaches to grasp the mechanical behaviour of flax fibres and bundles - Emmanuelle Richely
- Flax between art and engineering: focus on factors that influence the mechanical properties of technical fibres - Alessia Melelli
- Elementary flax fibers tensile tests: from quasi-static behavior to strain-rate dependent model - Martin Lefebvre
- Investigation of the mechanics of interface between individual plant fibers using micro-mechatronics - Jason Govilas
- Full-field 3D Strain Mapping of Flax Fibre Composites by Means of 4D X-CT Digital Volume Correlation - Alexandros Prapavesis
- Novel numerical anatomy-based modelling of bamboo microstructure - Layth S. Al-Rukaibawi

9:00 – 11:45 SESSION 3: Advanced functionalities of bio-based composite materials and structures - Chairperson: Pierre Ouagne

9:00 – 9:30 Keynote lecture: Hygrothermal ageing and durability of bio-based composites and structures - Aart Van Vuure, Peter Davies

9:30 – 9:45 Q&A, Quiz

9:45 – 10:20 Flash presentations

- Experimental simulation of the outdoor humidity in Western Europe and its effect on the properties of flax fibre reinforced composites - Gilles Koolen
- Study of hygroscopic stresses with flax/mapp biocomposites: evolutions through hygroscopic cycles - Victor Popineau
- Creep behavior of bio-based sandwich structures under varying environment - Benjamin Sala
- Reliability of water immersion test in predicting the properties of flax - Maria Morissa Lu
- composites exposed to outdoor conditions
- Are biodegradable polymers suitable as matrix for biodegradable flax composites - Delphin Pantaloni
- Interfacial Toughening of Flax Fibre Reinforced Composites for Better Impact Resistance - Farzin Javanshour

10:20 – 11:00 Coffee break

11:00 – 11:30 Keynote lecture: Multifunctional bio-based and recycled composite materials and structures - Fabrizio Scarpa, Tulio Panzera

11:30 – 11:45 Q&A, Quiz

11:45 - 12:25 SESSION 4: BIO-BASED BUILDING-BLOCKS, POLYMERS, ADHESIVES AND COATINGS - Chairperson: Laurent Plasseraud

11:45 -12:20: Flash presentations

- Reductive catalytic fractionation of hemp hurd (low-valued residues) from textile fiber production - Suthawan Muangmeesri
- Synthesis of multifunctional phenolic composites with the valorization of forestry residues - Pedro Luiz de Hoyos-Martinez
- Development of innovative eco-materials based on plant and agrosourced polymers - Haris Brevet
- Influence of natural fibres on curing kinetic of biobased resins - Jean-Baptiste Jouenne
- From biobased synthons to more environmentally friendly biobased epoxy prepregs - Quentin Ruiz
- Development of a hybrid Lignin/TEOS coating for the protection of 2024 aluminium alloys used in the aerospace industry - Gabriel Cardoso Gonçalves

12:20 – 13:30 Lunch break

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13:30 – 17:20 SESSION 5: Bio-based composites and materials applications - Chairperson:
Vincent Placet

13:30 – 14:00 Keynote lecture: Bio-based materials in construction and architecture - Darshil Shah, Ana Gatóo

14:00 – 14:15 Q&A, Quizz

14:15 – 15:45 Keynote lecture: Bio-based composites in wind energy - Bo Madsen

14:45 – 15:00 Q&A, Quizz

15:00 – 15:30 Coffee break

15:30 – 16:00 Industrial applications #1: Developing Biobased Composite Products - Mark Lepelaar, NPSP

16:00 – 16:15 Q&A

16:15 – 16:45 Industrial applications #2 : Natural fiber composites for lightweight mobility - Marion Frey,
BCOMP

16:45 – 17:00 Q&A

17:00 – 17:20 Flash presentations

- SeaBioComp - Development and demonstrators of durable biobased composites for a marine environment - Elke Demeyer
- Use of Arundo Donax (giant cane) by-products in high-performance building components - Giada Giuffrida
- Natural fiber-reinforced geopolymers exposed to accelerated aging tests - Ana Carolina Constância Trindade

JULY 7

9:00 – 10:30 SESSION 6: Workshop on scientific journal writing – Darshil Shah, Alain Bourmaud

10:30 – 11:00 Coffee break

11:00 – 12:25 SESSION 7: Plant cultivation, harvesting and processing - Chairperson: Johnny Beaugrand

11:00 – 11:30 Fibre extraction and valorisation of the different constituents of European plants - Pierre Ouagne, Philippe Evon

11:30 – 11:45 Q&A, Quiz

11:45 – 12:25 Flash presentations

- Hemp fibre mechanical and morphological properties from different carded rovings for composite applications - Marie Grégoire
- Early-flowering hemp fibres for high-value textile or structural composites - Lola Pinsard
- Refining of Vegetal Fibres Through Emulsion Treatment - Mahadev Bar
- Impact of physical treatments on fibers individualization and mechanical properties of a flax/pla non-woven composite - Maxime Gautreau
- Physical and Morphologic Properties of Enset Fiber and effect of surface treatment - Mengstu Asherbe Arefe
- Mechanical characterization of a PHA bio-composites based on natural Alfa fibers - Ismahen Zaafouri
- Wood-based biomaterials development: why volatile organic compounds can be relevant indicators - Elise Bertheau

12:25 – 13:45 Lunch break

13:45 – 15:15 SESSION 8: Circular Bioeconomy - Chairperson: Jörg Müssig

13:45 – 14:15 Keynote lecture: End of life of bio-based materials - Karel van Acker

14:15 – 14:30 Q&A, Quiz

14:30 – 15:00 Keynote lecture: Renewable Carbon Concept and Initiative – what does this mean for bio-based composites? - Michael Carus

15:00 – 15:15 Q&A, Quiz

15:15 – 15:45 Coffee break

15:45 – 16:00 Best student presentation Prizes

16:00 – 17:00 Discussions, closing remarks





Dr. Olivier ARNOULD
Associate Professor,
University of Montpellier,
France



Mr. Steve BARRON
Film director and producer,
writer, music video director,
United Kingdom



Dr. Johnny BEAUGRAND
Research Director,
INRAE,
Nantes, France



Dr. Alain BOURMAUD
Research Engineer,
University of South Brittany,
France



Mr. Michael CARUS
Founder & CEO of
nova-Institute for Ecology
and Innovation, Germany



Pr. Michel CHALOT
Professor,
University of Lorraine,
France



Dr. Peter DAVIES
Research Engineer,
IFREMER,
France



Dr. Arnaud DAY
Scientific Director of
Fibre Recherche Développement
(FRD), France



Dr. Michaela EDER
Research group leader,
Max-Planck-Institute of Colloids
and Interfaces, Germany



Dr. Philippe EVON
Research Engineer,
INP-ENSIACET,
France



Dr. Marion FREY
R&D Project Manager,
Bcomp,
Switzerland



Mrs. Ana GATÓO
Researcher,
University of Cambridge,
United Kingdom



Dr. Tim HUBER
Senior Lecturer,
University of Canterbury,
New Zealand



Pr. Pasi KALLIO
Professor,
Tampere University,
Finland



Mr. Mark LEPELAAR
Co-founder and Director -
Product Engineering,
NPSP BV, Netherlands



Dr. Bo MADSEN
Associate professor,
DTU,
Denmark



Pr. Jörg MÜSSIG
Professor, Bremen
University of Applied Sciences,
Germany



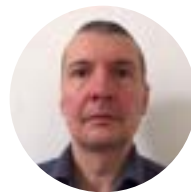
Pr. Pierre OUAGNE
Professor,
ENIT,
France



Pr. Tulio PANZERA
Professor,
UFSJ,
Brazil



Dr. Vincent PLACET
Research Engineer,
University of Franche-Comté,
France



Pr. Fabrizio SCARPA
Professor,
University of Bristol,
United Kingdom



Dr. Darshil SHAH
Lecturer,
University of Cambridge,
United Kingdom



Pr. Karel VAN ACKER
Professor,
KU Leuven,
Belgium



Pr. Aart VAN VUURE
Professor,
KU Leuven,
Belgium





GUIDELINES FOR USING ZOOM



Preparation

- ✓ Be in a calm environment, without any element of distraction and noise, ideally with a good wired connection.
- ✓ If you are trying to connect through WiFi and having problems, try connecting to the session through the internet connection (4G/5G) of your mobile phone. This might solve the problem.
- ✓ Click on the link we sent, to enter in the proceedings. Make sure to enter your first name and last name correctly so that you can be identified easily.
- ✓ Take care to have everything you will need, nearby.




During the proceedings

- ✓ If you are not presenting, turn off your microphone using the mute/unmute option. 
- ✓ If you are not presenting, turn off your camera using the start/stop video option. 
- ✓ Please do not overfill the chat with unrelated discussions.

If you are a participant and you want to ask questions

- ✓ If you want to ask a question, click 'Reactions'  and raise your hand. 
- ✓ Wait for the chairperson to leave you the floor, then turn on your microphone and camera to ask your question.
- ✓ When your question is well answered, you can turn off your camera and microphone.
- ✓ If you prefer, you can also ask your question in the chat or react to other messages. Please don't overfill the chat with unrelated discussions.

If you need to give a presentation / share content

- ✓ Before your presentation, open your PowerPoint or the content that you want to share.
- ✓ Turn on your microphone and camera when the chairman gives you the floor.
- ✓ Share your screen using the Share Screen option , select the PowerPoint window/ other software window of your presentation (not the screen), and share it in full screen.
- ✓ While presenting, if you want to open the chat, you can access the chat option  by hovering over this tab  at the top of your screen.
- ✓ To have a look at ZOOM while presenting, you need to have two screens, 1 for PPT sharing and another one with ZOOM opened. Please make sure that you share the presentation screen (the one that has just the content that you want to share).

Breakout rooms

- ✓ You will be assigned to breakout rooms for some dedicated sessions and coffee breaks.
- ✓ During the coffee breaks, you can change your breakout room by clicking on 'Breakout Rooms' and choosing your desired room. This might be only possible if you are using the latest version of ZOOM.
- ✓ You can also go back to the main waiting room by clicking on 'Quit the breakout room' and asking the technical team through chat to assign you your desired room.
- ✓ If you are having troubles in the breakout room, you can ask the technical team to help you by clicking on 'Ask for help'. A technical team member will then join you in the breakout room and resolve the problem.