

Program of ICBBM 2019



3rd International Conference on Bio-based Building Materials

June 26th – 28th 2019

Queen's University Belfast, Belfast (UK)

Riddel Hall, 185, Stranmillis Road, Belfast BT9 5EE



Tuesday 25th June

18:00	19:30	Registration - Welcome reception	(Riddel hall)
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Wednesday 26th June

08:30	09:00	Registration		
09:00	09:30	Opening session		(Conference room)
09:30	10:15	Plenary conf. 1 - Prof. R. D. Toledo Filho - <u>Durability of bio-based building materials</u>		
		Chairs: M. Sonebi & S. Amziane		(Conference room)
10:15	10:40	Break		
		SESSION #1	A1 – Natural materials Chair : F. Collet Room: Conference room 1	B1 – Life cycle assessment Chair : C. Magniont Room: Conference room 2
				C1 – Hygroscopic behaviour Chair : S. Marceau Room: Lecture room 2
10:40	11:00	ID 262 - Influence of hemp retting on the hydration of ordinary Portland cement and the properties of hemp wood-OPC concrete (L.-C. Hoang)	ID 163 - Dynamic life cycle carbon assessment of three bamboo bio-concretes in Brazil (F. Pittau)	ID 231 - Hygric properties of materials used for ISOBIO wall solution for new buildings (S. Pretot)
11:00	11:20	ID 183 - Various methods of binding light agricultural byproducts (R. Gattin)	ID 200 - Life cycle sustainability assessment of enzyme-induced carbonate precipitation for fugitive dust control (A. Raymond)	ID 127 - Hygrothermal performance of a straw bale building (L. Freitas Dutra)
11:20	11:40	ID 259 - Characterisation of natural fibres for enhancement of concrete properties (A. C. Da Costa Santos)	ID 218 - Opportunities for reducing greenhouse gas emissions of insulation materials in Canada after cannabis legalization (A. Arrigoni)	ID 208 - A local kinetics of sorption model: theoretical background and application to the simulation of an ISOBIO demonstrator (N. Reuge)
11:40	12:00	ID 141 - Re-baling straw for better insulation (S. Platt)	ID 221 - An LCA case study of vernacular architecture retro-fitting in Italy with natural and bio-based materials (G. Dotelli)	ID 229 - Moisture buffering capacity of clay-based plasters (A. Phelipot-Mardelé)
12:00	12:20	ID 290 - Study of different spruce strands and their effect on the properties of wood-cement composites (F. Gauvin)	ID 276 - Theoretical and experimental modeling of the energy and environmental behavior of bio-based materials (M. Benkhaled)	ID 269 - Durability and hygrothermal performance of bio-based materials in Northern European climate (M. Sinka)
12:20	12:40	ID 301 - Influence of origin and year of harvest on the performance of pith mortars (M. S. Abbas)	ID 293 - Promoting the use of bio-based insulation for the energy retrofit of historical dwellings, a specific methodology (S. Claude)	ID 199 - Bio-based and recycled materials: characterisation and hygro-thermal assessment (A. B. Romano)

12:40	13:55	Lunch		
14:00	14:45	Plenary conf. 2 - Dr. D. Jones - <u>Performance of bio-based building material - Products meeting expectations</u> <i>Chair: Prof. C. Lanos</i> <i>(Conference room)</i>		
SESSION #2		A2 – Innovative test methods <i>Chair : R. Gattin</i> Room: Conference room 1	B2 – Earth-based materials <i>Chair : D. Rangeard</i> Room: Conference room 2	C2 – Material treatments <i>Chair : Y. Xiao</i> Room: Lecture room 2
15:00	15:20	ID 292 - Characterisation of vegetal compounds responsible for the setting delays in hydraulic binders (S. Marceau)	ID 119 - Processing methods for optimizing the mechanical strength of raw earth-based materials (S. Guihéneuf)	ID 202 - Development of sunflower-based materials coated with glycerol esters to prevent microbial growth (C. Magniont)
15:20	15:40	ID 107 - Optimizing precipitation method of microbial carbonate precipitation on model recycled aggregate (W. Zeng)	ID 112 - Strength and stress-strain characteristics of coir fibre reinforced cement stabilised rammed earth (S. B. R. Ramawat)	ID 204 - Performance evaluation of palm stems fibers in cement-based materials (Y. Zouaoui)
15:40	16:00	ID 143 - Development of a method for assessing resistance to mold growth: application to bio-based composites (M. Viel)	ID 122 - Hygrothermal properties of earth insulation materials: evaluation of uncertainties and consequences (T. Vincelas)	ID 206 - Comparative study of different linseed oil treatments on wood and hemp (A. Bouchikhi)
16:00	16:20	ID 167 - Swelling potential of bio-composite based on clay binder and natural fibers (N. Belayachi)	ID 195 - Evaluation of different raw earthen plasters stabilized with lime for bio-building exploitation (A. E. Losini)	ID 117 - Characterization and treatments of diss fibers for bio-composites manufacture (M. Nouri)
16:20	16:50	Break		
SESSION #3		A3 – Mechanical properties <i>Chair : T. Lecompte</i> Room: Conference room 1	B3 – Admixtures <i>Chair : L. Bessette</i> Room: Conference room 2	C3 – Eco-friendly binders <i>Chair : L. Hoang</i> Room: Lecture room 2
16:50	17:10	ID 215 - Performance of biobased facade panels (F. Van Der Burgh)	ID 211 - Formulation of novel fire retardant additives for biobased insulation material (V. Colson)	ID 170 - Partial replacement of cement by combination of fly ash and metakaolin in bamboo bio-concretes (R.D. Toledo Filho)
17:30	17:50	ID 166 - Potential of oleaginous flax fibre as mortar reinforcement (V. Sabathier)	ID 256 - Influence of a bioadmixture on adhesion phenomena between concrete and formwork (C. Chadfeau)	ID 205 - Influence of fly ash on the compressive strength and Young's modulus of concrete (P. R. Lustosa)
17:50	18:10	ID 137 - Assessing variability of hempcrete properties during experimental tests: a focus to specimen's number (C. Niyigena)	ID 154 - Bio-based rheology modifying agents (G. Guldogan)	ID 209 - Lightweight magnesia cement by organic templating (E. M. Gualtieri)
18:10	18:30	ID 100 - Selected properties of concrete containing palm fibers (J. Khatib)	ID 273 - Properties of RCA concretes mixed with cement paste dissociation agent (S. Yang)	D 158 - Mechanical properties of geopolymer produced by rice husk ash calcined at low temperature (C.-T. Chen)

Thursday 27th June

08:30	09:15	Plenary conf. 3 - Prof. J.-E. Aubert - <u>Earth construction materials: from past to modern buildings</u> <i>Chair: Prof. R. D. Toledo Filho</i> (Conference room)		
SESSION #4		A4 – Case studies <i>Chair : A. Perrot</i> Room: Conference room 1	B4 – Mechanical properties <i>Chair : D. Jones</i> Room: Conference room 2	C4 – Durability <i>Chair : T. Collinart</i> Room: Lecture room 2
09:30	09:50	ID 237 - Research development of glued laminated bamboo (glubam) and cross-laminated bamboo and timber (CLBT) (Y. Xiao)	ID 179 - The effect of hydraulic cements on the flexural behavior of wool reinforced mortars (A. P. Fantilli)	ID 131 - Pore structure and carbonation of hydrated lime mortar with mussel shell aggregate (C. Martínez-García)
09:50	10:10	ID 138 - Development of interactive facade elements on base of waste materials of (waste) water companies (W. Bottger)	ID 176 - Lateral load carrying capacity of timber walls filled hemp concrete: experimental and numerical investigation (H. Wadi)	ID 147 - Regenerative hydrogel-based living microbial mortars: investigation of viability and strength in successive material generations (S. Williams)
10:10	10:30	ID 174 - Elastic wall bubbling model to describe the physical properties and effects of biochar on mortar mixture (H. W. Kua)	ID 191 - Effect of coconut fiber content on the mechanical properties of mortars (H. Bui)	ID 187 - The effect of long term weathering on hemp and rapeseed straw concrete (J. Sheridan)
10:30	10:50	ID 125 - Agrobloc project: bio-based concrete masonry blocks (S. Le Thierry)	ID 240 - Tensile performance of lime-based natural-fibre compo-sites as strengthening systems for masonry (N. Trochoutsou)	ID 145 - Moisture- and freeze-thaw-induced deterioration of natural fiber composites with low fiber contents (K. Noonan)
10:50	11:20	Break		
SESSION #5		A5 – Earth-based materials <i>Chair : S. Pretot</i> Room: Conference room 1	B5 – Microstructure & porosity <i>Chair : P. Blanchet</i> Room: Conference room 2	C5 – Durability <i>Chair : O. Kinnane</i> Room: Lecture room 2
11:20	11:40	ID 281 - Towards field-oriented tests to evaluate the workability of earth slips for building applications (T. Vincelas)	ID 203 - Potential of x-ray tomography for the exploration of vegetal concretes' porous structure (C. Magniont)	ID 228 - Behaviour of bio-based material in multilayer wall during fire test (C. Lanos)
11:40	12:00	ID 230 - Potential organic binders to stabilize earth construction materials (J.-E. Aubert)	ID 227 - Thermo-structural behavior of soft wood under high X-ray tomography resolution (D. Kosiachevskyi)	ID 162 - Natural fiber-reinforced plastics composites: long-term physico-structural performance in façades (D. Friedrich)
12:00	12:20	ID 226 - Adobe bricks of greenlandic fine-grained rock material (I. M. G. Betelsen)	ID 248 - Experiment about water permeability uses bacteria self-healing materials (M. Sugiyama)	ID 223 - Fire behaviour of biobased textile reinforced cement composites (L. Haurie)
12:20	12:40	ID 120 - Addition of bio based reinforcement to improve workability, mechanical properties and water resistance of earth-based materials (S. Guihéneuf)	ID 283 - Micro-analysis on the internal structure of fibres-soil composite (H. Danso)	ID 132 - Water transport properties of cement mortars with mussel shell aggregate (C. Martínez-García)

12:40	13:40	Lunch		
13:40	14:25	Plenary conf. 4 - Prof. G. Keeffe - <u>Growing change: designing the new city</u> <i>Chair: Prof. E. Ghorbel</i> (Conference room)		
SESSION #6		A6 – Eco-friendly binders <i>Chair : A. Valenza</i> Room: Conference room 1	B6 – Recycled materials <i>Chair : J. Page</i> Room: Conference room 2	C6 – Durability <i>Chair : C. Lanos</i> Room: Lecture room 2
14:40	15:00	ID 234 - Some mechanical and thermal properties of plant aggregates cement composites: Evaluation of a new binder based on lime (C. Onesippe Potiron)	ID 101 - Properties of concrete made of fine aggregates partially replaced by incinerated municipal solid waste bottom ash (J. Khatib)	ID 264 - Durability of flax/bio-epoxy composites intended for strengthening applications in construction (K. Benzarti)
15:00	15:20	ID 212 - Recycling of raw wheat husk to manufacture magnesia cement based lightweight building materials (V. Barbieri)	ID 225 - Effect of recycled PET fibers inclusion on the shrinkage of adobe brick (M. D. S. Magalhães)	ID 286 - Assessment of straw degradation inside straw bale walls in severe cold region of China (X. Yin)
15:20	15:40	ID 306 - Gypsum replacement material: A biobased proposal (P. Blanchet)	ID 130 - Possibilities of mussel shells as bio-based building insulation (C. Martínez-García)	ID 295 - Comparison of physical and mechanical properties of fibre-reinforced cementitious mortars after wet/dry cycles (B. Poletanovic)
15:40	16:00	ID 257 - Comparison between Portland cement concrete and geopolymer concrete based on metakaolin and GGBS (A. Hasnaoui)	ID 160 - Use of natural minerals as protective barriers of bacteria for self-healing mortar (M. Tezer)	ID 268 - Water-resistance study of linear friction-welded thermo-treated beech using tomography (P. Perré)
16:00	16:30	Break		
SESSION #7		A7 – Thermal properties <i>Chair : K. Benzarti</i> Room: Conference room 1	B7 – Mechanical properties <i>Chair : W. Bottger</i> Room: Conference room 2	C7 – Acoustic properties <i>Chair : A. Fantili</i> Room: Lecture room 2
16:30	16:50	ID 116 - Comparison of the performance of bio-based insulation with traditional expanded polystyrene (P. Blanchet)	ID 260 - Induced modification of flexural toughness of bio-lime based mortars by addition of reed fibers (D. Badagliacco)	ID 156 - Towards a better understanding and knowledge of biobased materials through a new acoustic database (P. Glé)
16:50	17:10	ID 142 - Effect of compaction on thermal and hygric properties of hemp composites (M. Viel)	ID 275 - Influence of cork powder grain size in thermal and mechanical properties of cork-NHL mortars (B. Megna)	ID 263 - Acoustical and thermal self-consistent modelling for the optimisation of vegetal wools used in green buildings (C. Piegay)
17:10	17:30	ID 185 - Experimental investigation and numerical modelling of heat and moisture transfer of a wall based on palm fibers concrete (A. Boudenne)	ID 274 - Mechanical and physical properties of mortar of partially replaced fine aggregates with sawdust (O. Nanayakkara)	ID 155 - Acoustical properties of hemp-clay : from material to wall scale (P. Glé)
17:30	19:00	Free time		
19:00	-	Conference dinner at 19.00 at Riddell Hall (185, Stranmillis Road, Belfast)		

Friday 28th June

SESSION #8		A8 – Agro by-products <i>Chair : J. Khatib</i> Room: Conference room 1	B8 – Mineral materials <i>Chair : P. Glé</i> Room: Conference room 2
09:00	09:20	ID 190 - Experimental investigation on the use of alpha fibres as reinforcement of cementitious materials (S. Ajouguim)	ID 135 - The development of cellular lightweight concrete made from oil palm fiber and biochar (W. Pansuk)
09:20	09:40	ID 278 - Formulation of lime mortars based on natural fibers and waste materials for more sustainable buildings (B. Megna)	ID 148 - Biochar-concrete composite: manufacturing, characterization and performance evaluation at elevated temperature (S. Gupta)
09:40	10:00	ID 245 - Comparison of diss and crimson fountaingrass fibers as aggregates for cement mortars (A. Valenza)	ID 297 - Waste glass reuse in geopolymer binder prepared with metakaolin (A. Bouchikhi)
10:00	10:20	D 232 - Mechanical performance and durability study of new construction materials based on mortar containing date palm fibers wastes (A. Boudenne)	ID 272 - Preliminary studies of hemp and recycled aggregate concrete (S. Ghosn)
10:20	10:50	Break	
SESSION #9		A9 – Case studies and social issues <i>Chair : R. D. Toledo Filho</i> Room: Conference room 1	B9 – Innovative materials <i>Chair : M. Sinka</i> Room: Conference room 2
10:50	11:10	ID 246 - Application of hemp-lime renders to improve the insulating capacity of building walls (O. Kinnane)	ID 258 - Effects of Bacillus Subtilis on the compressive strength, porosity and rapid chloride permeability of concrete (T. H. Nguyen)
11:10	11:30	ID 252 - Case study: Development and evaluation methods for bio-based construction realized with paper-based building materials (E. Kanli)	D 302 - Properties of mycelium-composite biobased insulation materials with local organic waste streams as substrate and after use for mushroom cultivation (W. Bottger)
11:30	11:50	ID 271 - A picture on bio-based building materials as thermal insulation for sustainable buildings (Z. F. El Faridy)	ID 123 - Characterisation of light weight concrete impregnated with cement and charcoal (T. G. L. J. Bikoko)
11:50	12:10	ID 247 – What is a sustainable or low impact concrete (O. Kinnane)	ID 175 - Using biochar for air purification (H. W. Kua)
12:15	12 :30	Closing ceremony <i>(Conference room)</i>	