Day 1	19/7/2023	Program		
		Venue: LHN-B1-15 (Lecture Theater)	Venue: LHN-L1-22 (TR +34)	Venue: LHN-L1-14 (TR+26)
08:30 - 09:00			Registration (Venue: LHN-B1 foyer)	
09:00 - 09:20		**Welcome & opening speech** Paulo Bartolo *Nanyang Technological University*		
09:20 - 09:55		Keynote speech **Leveraging Innovation & Technology to Transform the Built Environment in Singapore** Ng Hsiao Piau Building and Construction Authority of Singapore (BCA) Session chair: Paulo Bartolo		
09:55 - 10:30		Keynote speech **Thermoplastic and Metal style 3D Printing with Concrete** Jay Sanjayan *Swinburne University of Technology* Session chair: Ming Jen Tan		
10:30 - 10:50			Coffee break (Venue: LHN-B1 foyer)	
		Parallel Session 1 **High Performance Material** Session chair: Yu Chen Venue: LHN-B1-15 (Lecture Theater)	Parallel Session 2 **Sustainable Materials** Session chair: Jung Hoon Kim Venue: LHN-L1-22 (TR +34)	Parallel Session 3 **Modeling and Simulations** Session chair: Yaxin Tao Venue: LHN-L1-14 (TR+26)
10:50 - 11:10		**Local Stability of Stocky and Slender WAAM Stainless Steel Equal Angle Sections** *Siân I. Evans, Fangda Xu, & Jie Wang* University of Bath	**Manufacturing optimization and mechanical properties characterization of 3D-printed recycled plastics toward programmable structural design** Wenqian Ma, Haiyang Zhao, Jiaqi Li, & Nan Hu *South China University of Technology*	**Experimental Study and OpenSees Modelling for Thermal Response of 3D Printed Concrete Exposed to Fires** Jinjin Wang, Cheng Chen, Tianwei Chu, Liming Jiang, Vihar Nimje, Tejeswar Yarlagadda, & Asif Usmani The Hong Kong Polytechnic University
11:10 - 11:30		**Accelerating structural build-up of 3D printable cementitious materials by using Ca(NO3)2 solution in the context of set-on-demand printing** Yu Chen, Erik Schlangen, & Oğuzhan Çopuroğlu *Delft University of Technology*	**3D Printing of Large-Scale Biodegradable Material** Yi Wei Daniel Tay, Eugene Soh, Hortense Le Ferrand & Ming Jen Tan *Nanyang Technological University*	**CFD simulation of twin-pipe pumping process for 3D concrete printing** Yaxin Tao, Geert De Schutter, & Kim Van Tittelboom *Ghent University*
11:30 - 11:50		**Architected lattice-reinforced composite components with tunable properties and mechanical responses** *Lu Zhu, Man Chen, Binglin Xie, & Nan Hu* South China University of Technology	**Exploration of 3D Printed Concrete with Recycled Fine & Coarse Aggregates: Material, Equipment and Performance** Zhenyuan Lv, Zhenhua Duan, Jianzhuang Xiao, & Guangchao Ji *Tongji University*	**Interfacial Cracking at Layer and Filament interfaces of 3D Printed Concrete: Experimental and Numerical Studies** Wangdui Gerong, Pengfei Wang, Minmao Liao, Zhaohui Chen, & Junbo Sun *Chongqing University*

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11:50 - 12:10	**Upcycling Fluid Catalytic Cracking (FCC) Ash for Digital Construction** Bing Lu, Teck Neng Wong, Shunzhi Qian *Nanyang Technological University*	**Research on the printability of 3D printable geopolymer concrete based on a new extrusion device** Zhaoliang Sheng, Jinlong Pan, & Yamei Zhang *Southeast University*	**A numerical buildability prediction of 3D–printed concrete at early-ages** Haoran Liu, Tao Ding, Jianzhuang Xiao, & Viktor Mechtcherine *Tongji University*
12:10 - 13:00	———	Lunch (Venue: LHN-B1 foyer)	———
13:00 - 13:35	Keynote speech **3D Printing with Strain Hardening Cementitious Composites; challenges, printing process and final properties** Erik Schlangen *Delft University of Technology* Session chair: Ming Jen Tan		
13:35 - 14:10	Keynote speech **Large-Scale 3D Printing with Coarse Aggregate Concrete and Integration of Steel Reinforcement** Viktor Mechtcherine *Dresden University of Technology* Session chair: Paulo Bartolo		
14:10 - 14:15	Transitional Break		
	Parallel Session 1 **High Performance Material** Session chair: Bing Lu Venue: LHN-B1-15 (Lecture Theater)	Parallel Session 2 **Hardened Properties** Session chair: Yan Hao Tan Venue: LHN-L1-22 (TR +34)	
14:15 - 14:35	**Application of Smart Materials in 3D Concrete Printing** Yi Wei Daniel Tay, Li Ning Wang, Xiang Yu Wang*, Ming Jen Tan & Teck Neng Wong *Nanyang Technological University*	**Effects of vinyl acetate and ethylene copolymer on printing and mechanical performances of 3D printing cementitious materials** Zhenbang Liu, Mingyang Li, Zhixin Liu, & Teck Neng Wong *Nanyang Technological University*	
14:35 - 14:55	**High-performance 3D concrete printing with zeolite** *Bing Lu, Mingyang Li, Shunzhi Qian, Holden Ho King Li, & Teck Neng Wong* Nanyang Technological University	**Mechanical Properties of 3D Printed ECC Beams Reinforced with FRP Mesh** *Fangming Jiang, Manfang Lin, & Kequan Yu* Tongji University	
14:55 - 15:15	**Impact of Water to Solids Ratio on Stability, Printability, and Mechanical Characteristics of 3D Printable Foam Concrete** Uday Boddepalli, Biranchi Panda, & Indu Siva Ranjani Gandhi *Indian Institute of Technology Guwahati*	**Structural Deterioration and Mechanical Degradation of Limestone Calcined Clay Cement (LC3) under Elevated Temperature** K.M. Liew, Gen Li, Binbin Yin, Jinhua Sun, & Venkatesh Kumar R. Kodur *City University of Hong Kong*	
15:20 - 17:20	Lab Tour (Meeting point: LHN-B1 foyer)		
17:20 - 18:20	Welcome reception (Venue: LHN-B1 foyer)		

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Day 2	20/7/2023	Program	
		Venue: LHN-B1-15 (Lecture Theater)	**Venue: LHN-L1-22 (TR +34)**
09:00	09:35	Keynote speech **Steel Additive Construction: New Possibilities for Efficient Structural Systems** Vittoria Laghi *Massachusetts Institute of Technology* *University of Bologna* Session Chair: Teck Neng Wong	
09:35	10:10	Keynote Speech **3D Printing Vision for the Built Environment and Case Study by Obayashi** Naoki Kajita & Haruna Okawa *Obayashi Corporation* Session Chair: Teck Neng Wong	
10:10	10:30	Keynote speech **Standardization, research and testing for statutory submission for approval of 3D concrete printed structures: a comparison between Singapore and Netherlands based on the Eurocode** Hans Laagland & Shaun Wu *Witteveen+Bos* Session Chair: Teck Neng Wong	
10:30	10:50	Coffee break (Venue: LHN-B1 foyer)	
		Parallel Session 1 **Structural Build-up/ Analysis** Session chair: Vittoria Laghi Venue: LHN-B1-15 (Lecture Theater)	Parallel Session 2 **Novel Process** Session chair: Mingyang Li Venue: LHN-L1-22 (TR +34)
10:50	11:10	**Penetrometry: A Promising Technique for Characterizing Concrete Rheology in The Context of 3DCP** Atta Ur Rehman & Jung-Hoon Kim *Yonsei University*	**Buildability Enhancement of Hybrid Alkali Activated Cements by Two-part Print Head Mixing** Sayanthan Ramakrishnan & Jay Sanjayan *Swinburne University of Technology*
11:10	11:30	**The Improvements of In-situ Polymerization on The Properties of 3D Printed Concrete** Lijing Shao, Pan Feng, Qi Liu, & Zhaolong Liu *Southeast University*	**Set-on-demand Geopolymer for Concrete 3D Printing Using Ternary Activator** Shravan Muthukrishnan, Sayanthan Ramakrishnan, & Jay Sanjayan *Swinburne University of Technology*

11:30 - 11:50	**Active Rheological Control for 3D Printed Cement-Based Materials by Temperature: An Exploratory Study** Yi Zhang, Kim Van Tittelboom, Geert De Schutter, & Zhengwu Jiang *Ghent University*	**Mechanical Properties and Additive Manufacturing of Alkali-Activated Lunar Regolith in Artificial Lunar Environments** Zifan Geng, Lizhi Zhang, Zhiwen Wu, Yi Wei Daniel Tay, Sean Gip Lim, & Ming Jen Tan *Nanyang Technological University*
11:50 - 12:10	**Effect of magnetic intervention time on the buildability of printable cement and limestone pastes containing Fe_3O_4 particles** Yiyuan Zhang, Karel Lesage, Yi Zhang, Yaxin Tao, & Geert De Schutter *Ghent University*	**Automated force sensitive reinforcement for 3DCP** Vuong Quoc Nghia, Nguyen Quang Nam, Bing Lu, Jian Hui Lim, Holden Ho King Li, & Quang Cuong Pham *Nanyang Technological University*
12:10 - 13:00	Lunch (Venue: LHN-B1 foyer)	
13:00 - 13:35	Keynote Speech **Flexural performance of composite beams 3D-printed with ECC and recycled concrete** Tao Ding *Tongji University* Session chair: Ming Jen Tan	
13:35 - 14:10	Keynote speech **Advancing 3D Concrete Printing through Fusion of Materials, Equipment and Active Process Control: Yonsei University CORAL's Research Efforts to Improve Print Quality and Speed** Jung-Hoon Kim *Yonsei University* Session chair: Ming Jen Tan	
14:10 - 14:30	Keynote speech **Use of Sustainable Mineral Plasticizer and Mineral Accelerator Based on Ground Calcium Carbonate in Digital Formulation** Kienmun Tang & Teddy Wong *Omya Singapore Pte. Ltd.* Session Chair: Teck Neng Wong	
14:30 - 14:50	Keynote speech **Building of Single-Storey Semi-Detached Housing in Baling, Kedah for flood victims using: 3D Concrete Printing** Mohamed Faisal Bin Khomsani *Mapei Far East Pte Ltd* Session Chair: Teck Neng Wong	
14:50 - 15:10	Keynote speech **3DCP – A global perspective** Simon Klint Bergh *COBOD* Session chair: Teck Neng Wong	
15:10 - 15:15	Transition Break	

	Parallel Session 1 **Hardened Properties** Session chair: Yading Xu Venue: LHN-B1-15 (Lecture Theater)	Parallel Session 2 **Novel Process** Session chair: Shipeng Zhang Venue: LHN-L1-22 (TR +34)
15:15 - 15:35	**Strain-rate dependent multistable architected composite material for adaptable energy dissipation** Xianhua Yao, Nan Hu, Qing Dong, & Xuanyou Li *South China University of Technology*	**Design of a Real-time Geometric Quality Monitoring System for 3D Printed Concrete Filaments Using 2D Line Laser** Jihye Jhun, Dong-Hyun Lee, Atta Ur Rehman, & Jung-Hoon Kim *Yonsei University*
15:35 - 15:55	**Mechanical Properties of Cementitious Composites Reinforced with 3D Printed Lattices: Experiment and Modeling** Yading Xu & Branko Šavija *Delft University of Technology*	**Development of CO2-integrated 3D Printing Concrete** Shipeng Zhang, Long Li, Lucen Hao, & Chi Sun Poon *The Hong Kong Polytechnic University*
15:55 - 16:15	**Rheology, mechanical properties and pore structure of 3D printing concrete with coarse aggregates** Xianggang Wang, Zijian Jia, & Yamei Zhang *Southeast University*	**Influence of Printing Pattern on Bearing Capacities of 3D Printed Concrete Hollow Structures** Zhenyuan Wang, Zhaohui Chen, Minmao Liao, Junbo Sun, & Xiao Sun *Chongqing University*
16:15 - 16:35	**Structural Performance of a Large Column with an Outer Shell Formed by Short-Fiber Reinforced Mortar Extrusion** Koji Kinomura, Wenbo Zhang, & Keisuke Kawamura *Taisei Corporation*	**Carbon Sequestration with 3D Concrete Printing: A Review on Challenges and Potentials** Sean Gip Lim, Yi Wei Daniel Tay, & Ming Jen Tan *Nanyang Technological University*
16:35 - 16:55	**3D printable low-carbon concrete with nano-silica pretreated recycled fine aggregates** Xuan Liu, Xianrui Chen, Gordon Leung, & Ivan M.L. Sham *Nano and Advanced Materials Institute, Hong Kong, China*	**Exploring the 2.5D SIMTP with the Adaptive Refinement based on the Nodal Thickness** Tejeswar Yarlagadda, Zixin Zhangb, Liming Jiang, Pradeep Bhargava, & Asif Usmani *The Hong Kong Polytechnic University*
18:30 - 22:30	Conference dinner Venue: Marina Bay Sands Singapore	

Day 3	21/7/2023	Program	
		Venue: LHN-B1-15 (Lecture Theater)	Venue: LHN-L1-22 (TR +34)
09:00	09:35	Keynote Speech **3D Printing in Construction: A Sustainable Solution for a Changing World** Antoine Motte *Construction3D* Session Chair: Ming Jen Tan	
09:35	10:10	Keynote Speech **Building an Additive Construction Future** Alexander Liu *ASTM Asia Pacific* Session Chair: Ming Jen Tan	
10:10	10:30	Coffee break (Venue: LHN-B1 foyer)	
		Parallel Session 1 **Novel Process** Session chair: Li Wang Venue: LHN-B1-15 (Lecture Theater)	Parallel Session 2 **Design and Applications** Session chair: Alexander Liu Venue: LHN-L1-22 (TR +34)
10:30	10:50	**Continuous and adaptive path planning for 3D concrete printing** Qian Wan, Li Wang, & Guowei Ma *Hebei University of Technology*	**Construction Technology of The Curved 'Mars House' Digital Hotel Project in China using Concrete 3D Printing** Xiqiang Lin, Hailong Wang, Xiaoyan Sun, Kikhia Wael, Zhennan Wu, Lan Lu, & Jiawei Zhao *Zhejiang University*
10:50	11:10	**Application of textile reinforcement for 3D concrete printed structures** Akilesh Ramesh, Pathmanathan Rajeev, & Jay Sanjayan *Swinburne University of Technology*	**Branching Structure for Reinforcement Anchorage produced with Wire and Arc Additive Manufacturing Technique** Neira Babovic, Vittoria Laghi, & Harald Kloft *TU Braunschweig*
11:10	11:30	**Quick Nozzle Mixing Technology for 3D Concrete Printing** Nan Zhang & Jay Sanjayan *Swinburne University of Technology*	**Feasibility study on reinforcement placement with a BIM-enabled collaborative robot system** Fei Teng, Dong Zhang, Heng Li, & Yiwei Weng *The Hong Kong Polytechnic University*

11:30 - 11:50	**Research progress and potential application of 3D concrete printing** Li Wang *Hebei University of Technology*	**Introducing pattern control to TO-based structure design for future-oriented construction** Zixin Zhang, Liming Jiang, Tejeswar Yarlagadda, Adam Fingrut, Yao Zheng, & Asif Usmani *The Hong Kong Polytechnic University*
11:50 - 12:10	**Investigation on interfacial enhancement between 3D printed permanent formwork and post-casted concrete** Qian Yu, Jinlong Pan, & Yamei Zhang *Southeast University*	**Optimizing the printing path of robotic-assisted fabrication for spatial lattice structure** Yangsheng Lin, Jiachen Li, & Nan Hu *South China University of Technology*
12:10 13:00	Lunch (Venue: LHN-B1 foyer)	
	Parallel Session 1 **Materials Morphology** Session chair: Tao Ding Venue: LHN-B1-15 (Lecture Theater)	Parallel Session 2 **Designs and Applications** Session chair: Yi Wei Weng Venue: LHN-L1-22 (TR +34)
13:00 - 13:20	**3D printed self-healing strain hardening cementitious composite as permanent formwork for self-repair of structural elements** Shan He, Yu Chen, Mladena Luković, & Erik Schlangen *Delft University of Technology*	**3D Printing of Tubular Connectors for Space Frame Structures** Ashok Kumar Perka, Bijoy Rajak, & Shibashis Ghosh *Tata Steel, India*
13:20 - 13:40	**3D Printed Concrete with Coarse Aggregates: Built–in–Stirrup Permanent Concrete Formwork for Reinforced Columns** Yidong Chen, Yunsheng Zhang, Wenhua Zhang, Zhiyong Liu, & Cheng Liu *Southeast University*	**Printing a Sustainable Future: Development of Construction 3D Printing in Hong Kong** Jacky K.H. Chung, Johnny C.Y. Lau, Lucas W.F. Lam, Eunice C.Q. Li, Michael S.H. Chung, & Kent S.K. Cheng *The Hong Kong Polytechnic University*
13:40 - 14:00	**In-Place 3D Printing for Repair of Building Components Using a Mobile Robot** Gido Dielemans, Lukas Lachmayer, Noor Khader, Norman Hack, Annika Raatz, & Kathrin Dörfler *Technical University of Munich*	**A Reusable non-reinforced 3D printing concrete arch bridge: design , construction, and evaluation** Min Yang, Xiaofei Yao, Yamei Zhang, & Zuo Wang *Southeast University*
14:00 - 14:25	**Award presentation for ASTM Best Student prize and Closing ceremony** Speaker: Prof Paulo Venue: LHN-B1-15 (Lecture Theater)	
14:25 - 15:25	Coffee break / Networking session Venue: LHN-B1 foyer	

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