



Frontiers in Silk Sciences and Technologies

Trento Innovation Conferences on Materials Engineering 2019

12-15 June 2019

Castello del Buonconsiglio – Sala Marangonerie

FINAL PROGRAMME



Wednesday 12 June

13.00-16.00	Registration of participants and poster display	
16.00-16.20	Antonella Motta, Nicola Pugno, Chris Holland Greetings and introduction of guests	University of Trento, University of Sheffield
16.20-16.30	Paolo Collini <i>Greetings from the Dean</i>	University of Trento - Italy
16.30-17.00	Luisella Pavan-Woolfe <i>The European Silk Route: a European cultural route project</i>	Council of Europe
17.00-17.30	Tiziana Lippiello <i>Silk Roads from Venice to South Korea</i>	University of Venice - Italy
Chair: Antonella Motta and Nicola Pugno		
17.30-18.30	Opening lecture: David Kaplan <i>New advances in engineering silk biomaterials</i>	TUFTS University - USA
18.30-19.00	Poster session	
19.00-20.00	Welcome buffet	

Thursday 13 June

Chair: Anna Rising and Nuno Neves		
9.00-9.20	Hyoungh-Joon Jin <i>Physical properties of carbonized silk fiber and its applications</i>	Inha University - South Korea
9.20-9.40	Jan Rainey <i>Applying molecular structure and dynamics to understand aciniform silk fibrillogenesis.</i>	Dalhousie University - Canada
9.40-10.00	Kazuharu Arakawa <i>Sequencing 1,000 spiders to elucidate the design mechanisms of spider silk proteins</i>	Keio University -Japan
10.00-10.20	Russell Stewart <i>How nature does polymer chemistry: duplication and shuffling of structural motifs in caddisworm silk H-fibroins</i>	University of Utah - USA
10.20-10.40	Coffee break	
Chair: Devid Maniglio and Vamsi Yadavalli		
10.40-11.00	Keiji Numata <i>Rationally-designed silk materials based on the spinning mechanism</i>	RIKEN - Japan
11.00-11.20	Miguel Oliveira <i>Enzymatically-crosslinked silk fibroin hydrogels and bioinks for musculoskeletal tissue engineering and in vitro cancer research</i>	University of Minho - Portugal
11.20-11.40	Gilson Khang <i>Bioengineered Osteoinductive Silk Fibroin Based Scaffold for Bone Tissue Engineering Application</i>	Chonbuk National University – South Korea
11.40-12.00	Philipp Seib <i>Reverse-engineered silk hydrogels as a stem cell delivery matrix</i>	University of Strathclyde -UK
12.00-12.20	Janne Johansson <i>Spidroin domains and their use for generation of biomedically important proteins</i>	Karolinska Institutet - Sweden
12.20-14.00	Lunch break	
Chair: Miguel Oliveira and Keiji Numata		
14.00-14.20	Sean Blamires <i>Spider silk property variability from genome to fibre</i>	University of New South Wales -Australia
14.20-14.40	Cedric Dicko <i>Catalytic and conductive silk fibers</i>	Lund University - Sweden
14.40-15.00	Federico Bosia <i>Mechanical Metamaterials Inspired by Spider Webs</i>	University of Turin - Italy

15.00-15.20	Ben Allardyce <i>Silk biomaterials for repairing the middle ear</i>	Deakin University - Australia
15.20-16.00	Coffee break & Poster session	
16.00-17.30	Round table: What is the next frontier in silk sciences and technologies? Chairs: Antonella Motta and Rui Reis	

Friday 14 June

Chair: Park Chan Hum and Martin Humenik		
9.00-9.20	Vamsi Yadavalli <i>Silk biomaterials for the fabrication of functional devices</i>	Virgina Commonwealth University - USA
9.20-9.40	Nuno Neves <i>Thai Silk Fibroin Hydrogels for Biomedical Applications</i>	University of Minho - Portugal
9.40-10.00	Tsunenori Kameda <i>Silk materials</i>	National Agriculture and Food Research Organization - Japan
10.00-10.20	José Pérez-Rigueiro <i>Lessons from spider and silkworm silk guts</i>	Murcia Institute for Agricultural and Food Research and Development - Spain
10.20-10.40	Coffee break	
Chair: Janne Johansson and Philipp Seib		
10.40-11.00	Park Chan Hum <i>Bio 3D printing for tissue engineering using Silk fibroin</i>	Chuncheon Sacred Heart Hospital - South Korea
11.00-11.20	Pornanong Aramwit <i>Sericin for commercialization: prospects and concerns</i>	Chulalongkorn University - Thailand
11.20-11.40	Subhas Kundu <i>3D silk biomaterial based cancer modelling</i>	University of Minho - Portugal
11.40-12.00	Martin Humenik <i>DNA-functionalization of surfaces based on recombinant spider silk proteins</i>	University of Bayreuth - Germany
12.00.12.20	David Breslauer <i>Better Materials for a Better World: Silk without Spiders and Leather without Cows</i>	Bolt Threads - USA
	Lunch break	
Chair: Chris Holland, Tsunenori Kameda		
14.00-14.20	Virginia Mastellari e Massimiliano Ornaghi <i>Weaving as a spider: the craft as imitation of nature</i>	University of Freiburg - Germany
14.20-14.40	Vladimir Tsukruk <i>Silk as a Functional Component in Functional Flexible Bionanocomposites</i>	Georgia Tech University - USA
14.40-15.00	Christian Riekkel <i>Local Silk Structure Revealed by X-ray Nanodiffraction</i>	The European Synchrotron - France
15.00-15.20	Martin Hanczyc <i>Regenerated silk fibroin membranes as separators for transparent microbial fuel cells</i>	University of Trento - Italy

15.20-15.40	Taiyo Yoshioka <i>Why is bagworm silk so strong and tough?</i>	National Agriculture and Food Research Organization - Japan
15.40-16.20	Coffee break & Poster session	
Chair: Pornanong Aramwit and Thomas Scheibel		
16.20-16.40	Thomas Scheibel <i>3D-Processing and Applications of Recombinant Spider Silk</i>	University of Bayreuth - Germany
16.40-17.00-	Luca Valentini <i>Combining living microorganisms with regenerated silk for bionicomposites: from smart food packaging to designing artificial mucosa</i>	University of Perugia - Italy
17.00-17.20	My Hedhammer <i>Tbd</i>	Spiber Technologies - Sweden
17.20-17.40	Chris Holland <i>Understanding the energetic cost of silk self-assembly</i>	University of Sheffield - UK

Saturday 15 June

Chair: Gabriele Greco and Kazuharu Arakawa		
9.00-9.20	Giovanna Salice <i>Bombyx mori production process: Latino-american experiences</i>	Social Cooperative Sociolario - Italy
9.20-9.40	Rangam Raijkhowa <i>Top down approach to produce silk particles and nanofibres</i>	Deakin University - Australia
9.40-10.00	Anna Rising <i>Improving the properties of artificial spider silk fibers</i>	Swedish University of Agricultural Sciences - Sweden
10.00-10.20	Zhengzhong Shao <i>The preparation, structure and properties of silk fibroin based gels</i>	Fudan University - China
10.20-10.40	Andreas Teuschl <i>Novel approaches to modify physical and bioactive properties of textile-engineering silk based implants</i>	Ludwig Boltzmann Institute - Austria
10.40-11.20	Coffee break & Poster session	
Chair: TBD		
11.20-11.40	Ki Hoon Lee <i>Structural Transition of Fibroin Induced by Slow Acidification</i>	Seoul National University – South Korea
11.40-12.00	Antonella Motta <i>Advanced processing methods for silk-based materials</i>	University of Trento - Italy
12.00-12.20	Nicola Pugno <i>TbD</i>	University of Trento - Italy
12.20-12.30	Closing remarks	
12.30-14.00	Lunch break	
15.00-19.30	Visit to Rovereto and cocktail party	

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