

AC 21 Special Project Fund Activity Report on Biomaterials Workshop for Tissue Engineering and Regenerative Medicines

**Reported by Dr Hu Zhang
The University of Adelaide**

Chair of Biomaterials Workshop for Tissue Engineering and Regenerative Medicines

Executive Summary:

The Biomaterials Workshop was successfully held at the University of Adelaide, Australia on Nov. 16-17, 2017. The workshop welcome speech was addressed by Acting Deputy Vice-Chancellor in Research Prof. Julie Owen. Prof. Jiang Chang from Shanghai Jiaotong & Institute of Ceramics of Chinese Academic Sciences, Prof. Yuhong Xu from Shanghai Jiaotong University, Prof. Jinying Zhang and Dr. Junnan Tang from Zhenzhou University, Prof. Qiguang Wang from Sichuan University, Dr. Xiaojuan Hao from CSIRO, Dr. Xiaolin Cui from Otago University, New Zealand, and Dr. Tao Wang from Western Australian University were invited to deliver an oral talk of their recent research outcomes. Locally, Prof. Stan Gronthos and Mr Jiabin Zhang from the University of Adelaide, Prof. Hans Griesser, Prof. Krasimir Vasilev, and Dr. Anton Blencowe from University of South Australia, and Prof. Hong-ping Zhang and Dr. Javad Tavakoli shared the research results of the biomaterials with the audience (details in Appendix 1: Agenda for Biomaterials Workshop). PhD students and postdoctoral researchers from the University of Adelaide and University of South Australia attended the workshop. Around 25 people participated in the two-day workshop.

The workshop covers biomaterials synthesis by RAFT polymerization, biomaterials functionalization via plasma treatment, biomaterials for bone repair, cartilage regeneration, mesenchymal stem cells therapy, cardiac stem cell therapy, antibacterial coating, and computational modeling of the biomaterials. All participants actively discuss and communicate during the workshop through the question sessions, tea/coffee breaks, lunch breaks and dinner session. It turns out to be a great success for the biomaterials-focused workshop.

Group Photo



Workshop Details

Participant lists

Dr. Hu Zhang (The University of Adelaide, Australia)
Dr. Jingxiu Bi (The University of Adelaide, Australia)
Prof. Julie Owen (The University of Adelaide, Australia)
Prof. Jiang Chang (Shanghai Jiaotong University & Shanghai Institute of Ceramics of CAS, China)
Dr. Xiaojuan Hao (CSIRO, Australia)
Prof. Stan Gronthos (The University of Adelaide, Australia)
Dr. Tao Wang (The University of Western Australia, Australia) --Postdoctor
Prof. Hans Griesser (University of South Australia, Australia)
Dr. Javad Tavakoli (Flinders University, Australia)
Dr. Steven Cui (The University of Otago, New Zealand)--Postdoctor
Prof. Qiguang Wang (Sichuan University, China)
Prof. Krasimir Vasilev (University of South Australia, Australia)
Mr. Jiabin Zhang (The University of Adelaide, Australia) --PhD student
Dr. Anton Blencowe (University of South Australia, Australia)
Prof. Yuhong Xu (Shanghai Jiaotong University, China)
Dr. Junnan Tang (Zhengzhou University, China) --postdoctor
Prof. Jingyin Zhang (Zhengzhou University, China)

Prof. Hongping Zhang (Flinders University)
Mr. Yechuan Zhang (The University of Adelaide, Australia) –PhD student
A/Prof. Youhong Tang (Flinders University, Australia)
Mr. Daniel Yun (The University of Adelaide, Australia)—PhD student
Yanping He (The University of Adelaide, Australia) – Master student
Dr. Andrew Milligan (University of South Australia, Australia)
Dr. Xanthe Strudwick (University of South Australia, Australia)—Postdoctor
Prof. Han Griesser' postdoctor and two PhD students, --arriving on the day
without registration.

Workshop Agenda

Nov. 16th Thursday

Morning sessions Chair Dr Hu Zhang (The University of Adelaide)

9:30 – 9:40 Welcome

Prof. Julie Owen (DVCR, The University of Adelaide)

Prof. Anton Middelberg (Executive Dean of ECMS, The University
of Adelaide)

9:40 – 10:40 Prof. Chang Jiang (Institute of Ceramics, CAS, China)

Study on Bioactive Hydrogels for Tissue Regeneration

10:40 – 11:10 Dr Xiaojuan Hao (CSIRO)

RAFT POLYMERS FOR BIOMEDICAL APPLICATIONS

Morning tea (11:10-11:40)

11:40 – 12:10 Prof Stan Gronthos (The University of Adelaide)

Mesenchymal Stem Cells and Tissue Regeneration

12:10 – 12:40 Dr Tao Wang (University of Western Australia)

Development of Collagen Scaffold for tissue regeneration

Lunch (12:40- 13: 30)

Afternoon Session Chair Prof. Chang Jiang

13: 30 – 14: 00 Prof. Hans Griesser (UniSA)

Design and surface analysis of antimicrobial coatings

14:00 – 14: 30 Dr Javad Tavakoli (Flinders University)

**The perspectives of multiscale plans in intervertebral disc
researches**

14:30 – 15:00 Dr Steven Cui (University of Otago, New Zealand);

**Impact of the scaffold microenvironment on multicellular
spheroid formation and function**

Afternoon tea (15:00- 15:30)

15:30 – 16: 00 Prof. Qiguang Wang (Sichuan University, China)
Regeneration of Stable Cartilage-Like Tissue Using Collagen Hydrogel Microspheres

16:00 – 16:30 Prof. Krasimir Vasilev (UniSA)
Nanoengineered plasma polymer films for biomedical applications

16:30 – 17:00 Prof. Hong-ping Zhang (Flinders University)
Computer simulation on materials surface and interface: A brief study

17:00 – 17:30 Mr Jiabin Zhang (University of Adelaide)
Enhanced Differentiation of MSCs in thermosensitive hydrogels

17:30 -22:00 Dinner (Australian National Wine Centre, The Gallery Room)

Nov. 17th Friday

Morning sessions (Ke Cheng)

9:30 – 10:30 Prof. Ke Cheng (USA)--Cancelled

10:30 – 11:00 Dr Anton Blencowe (UniSA)
Biomaterials for wound healing, antimicrobial coatings and tissue preservation

Morning tea (11:00-11:30)

11:30 – 12:30 Prof. Yuhong Xu (Shanghai Jiaotong, China)
Lipid Conjugated Antibody Fragments: Synthesis, Self-Assembly, and Bioactivities

12:30 – 13:00 Dr Junnan Tang (Zhengzhou University, China)
Heart repair function of thermosensitive gel encapsulated cardiac stem cells in myocardial infarction

Lunch (13:00- 14: 00)

Presentations

Welcome slides



Dr Hu Zhang from the University of Adelaide welcomes friends from overseas, interstate and local.



Discussion during the breaks.



Discussion during dinner





