

Annual Conference on

3D PRINTING & BIO-PRINTING IN HEALTHCARE

August 20-21, 2018 | Singapore City, Singapore



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Recent development in additive manufacturing for drug delivery and testing

Additive manufacturing (AM) emerges as a rapid prototyping technology and has gained its popularity recently due to its simple concept and various applications. In pharmaceutical applications, it can be used to develop drug delivery and testing systems. The US FDA approval of first 3D printed tablet in 2015 has ignited growing interest in 3D printing for pharmaceutical applications. Beyond

just a novel method for rapid prototyping, 3D printing provides advantages over traditional manufacturing. These advantages include the ability to fabricate complex geometries to achieve variable drug release kinetics and personalising pharmacotherapy for patients. Furthermore, 3DP allows fabrication of complex and micron-sized tissue scaffolds and models for drug testing systems.

Biography

Lifeng Kang obtained his PhD from the National University of Singapore in 2006 on drug delivery. Afterwards he went to the Massachusetts Institute of Technology to study tissue engineering by using microfabricated hydro-gels. Currently he is a Lecturer at the Faculty of Pharmacy, University of Sydney. His laboratory is focused on microscale technologies for drug delivery and tissue engineering. He has published 2 books, 49 peer-reviewed papers (42 as the main author), in top pharmaceutical journals, 62 abstracts and filed 7 patent applications (2 granted). He is highly interested in innovation. One of his patents on miniaturized skin permeation testing device has been licensed to a start-up company in Singapore. He is committed in training students. In his laboratory, he has supervised 8 postgraduate students. He teaches both undergraduate and postgraduate courses. He is also investigating the formative assessment and mastery learning in University educations.

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