Editorial

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Received: 21 July 2021 / Accepted: 10 January 2022 / Published online: 24 January 2022
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Three dimensional textiles (3D Textiles) have been used in many engineering and technology fields because of the special characteristics and performance they offer, where 3D structural integrity, manageable fibre orientation, and shape-ability all contribute to achieving properties and performance required for end applications. Recent years have witnessed the development of various solid, hollow, shell and nodal 3D textiles for components and structures in aerospace, transport, marine, wind energy, medical, and ballistic protection, to mention a few. Technologies involved in manufacturing 3D textiles include weaving, knitting, braiding, embroidery, filament winding and nonwoven. Improving manufacturing technologies, better understanding of micro-structure and properties, effects of defects, damage mechanisms and long-term performance when used in structural applications remain to be the main concern for further research. The series of World Conference on *3D Fabrics and Their Applications* have served an exclusive forum for distinguished engineers and scientists where they present and exchange ideas and share their wealth of knowledge regarding 3D textile and fibre architecture, properties and their applications. These international scientific meetings have proved to be popular among academic researchers as well as industrialists working in practical problems of textiles, 3D reinforced composite materials and structures.

It all started at the University of Manchester UK in 2008 by the late Professor John Hearle and Dr. Xiaogang Chen. The conference continued at Greenville, SC, USA in 2009, Wuhan, China in 2011, Aachen, Germany in 2012, Delhi, India in 2013, Raleigh, NC, USA in 2015, Roubaix, France in 2016, and returned to Manchester in 2018 on its 10th anniversary, organized and co-chaired by Professor Constantinos Soutis, *FREng*, and Dr Xiaogang Chen, *CText FTI*. It has become an important gathering of the global textile materials and engineering communities.

The 9th World Conference was initially planned for 3–4 April 2020 to be co-hosted by Zhongyuan University of Technology, China, but postponed to 8–9 April 2021 held online due to the pandemic of Covid-19. Academic papers, including 1 thematic paper and 5 keynote papers were presented in the areas of Development of 3D Fabrics, 3D Fabrics and Applications, 3D Fabrics for Protection, 3D Fabrics with Novel Performance, and Advances in Textile Technology and Materials.

In addition to the electronic proceedings to the 9th Conference, a special issue with 30 selected papers undergone a rigorous review was agreed to be published in the Springer

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journal of *Applied Composite Materials*, following the successful special issue publication after the 8th conference in 2018.

The support from the Department of Materials and Northwest Composite Centre of the University of Manchester, together with the support and encouragement from the 3D textiles community, is sincerely appreciated. The enthusiasm and wide interests of the authors and the participants in achieving the aims and objectives of the meeting and in addressing the major themes guaranteed the success of the event. The assistance from the staff and students of the University of Manchester and Zhongyuan University of Technology are much appreciated. The organisers also wish to thank Dr Peter Beaumont, the former Editor-in-Chief, Professor Maria Kashtalyan, the Editor-in-Chief, and Mr Brock Madsen, the Development Editor of the *Applied Composite Materials*, who enthusiastically supported this publication. Finally, we wish to thank the International Advisory Committee of the conference and the reviewers who helped ensure and maintain the high standard of the Journal *Applied Composite Materials* through publication of this collection of selected papers.

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