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# Seminar on Composite Materials for General Engineering, Armour and Aerospace Applications

DEPARTMENT OF PRODUCTION ENGINEERING

**PSG College of Technology**

Coimbatore 641 004, Tamilnadu

In association with

**University of New South Wales  
Canberra, Australia**

**28th-29th September 2018**



Venue : D-Block Conference Hall

**PSG College of Technology**

**Peelamedu, Coimbatore - 641 004**

## Seminar on

# Composite Materials for General Engineering, Armour and Aerospace Applications

### The College

PSG College of Technology, a premier institution for engineering education in India, started in 1951 has developed into a centre for advanced studies and research in several areas of engineering, technology, applied sciences and management. The college is autonomous since 1978 and is certificated by ISO. The college offers 21 under graduate, 43 postgraduate programs and research programs leading to MS/Ph.D. degrees. The laboratories, workshops and library of the college are all well equipped with modern facilities.

### Production Engineering Department

As manufacturing plays a major role in the development of the country, PSG College of Technology envisaged the need for trained manpower in manufacturing and thus the undergraduate programme in Production Engineering was started in the year 1975. Department offers two under graduate (B.E. Production Engineering (Regular – 4 years), B.E. Production Engineering (Sandwich – 5 years)) programmes and four post-graduate (Manufacturing Engineering; Product Design and Commerce; Virtual Prototyping and Digital Manufacturing and Production Engineering (Part-Time)) programmes. The programmes are accredited by National Board of Accreditation (NBA). All the laboratories of the department are approved for carrying out research, leading to MS/Ph.D. degree by Anna University, Chennai.

### About the Seminar

This seminar is intended to cover the applications of advanced composite materials for aerospace, personnel armour and military vehicles. The classical material for armour for personnel as well as vehicles for protection against incoming projectiles, missiles and other weaponry has been steel. The last century saw a tremendous increase in the penetrating power of armaments from handheld guns to automatic rifles, artillery, missiles and explosive ordnance, requiring protection systems with higher resistance to damage and penetration. Due to the high density of steel, the use of larger steel thickness to increase protection is no longer a viable option and armour manufacturers have started looking for advanced composite materials to enhance armour protection. These materials have very high specific strength and specific stiffness in comparison to steel and offer greater flexibility and tailorability with reduced weight and greater mobility. Advanced composites materials are also being used increasingly in the automotive industries.



**Dr. JUAN PABLO ESCOBEDO-DIAZ** is a Senior Lecturer in the School of Engineering and Information Technology (SEIT) at UNSW Canberra. He obtained his doctoral degree in Mechanical Engineering at Washington State University. Prior to taking up this academic appointment he held research positions at the Institute for Shock Physics (Washington State University) and Los Alamos National Laboratory. His main research interests centre on the dynamic behaviour of materials under extreme conditions, in particular high pressure and high strain rate. His focus has been on investigating the effects of micro structural features on the dynamic fracture behaviour of metals and metallic alloys. He has published primarily in the fields of Shock Physics and Materials Science.



**Dr. KRISHNA SHANKAR** is a Senior Lecturer in the School of Engineering and Information Technology (SEIT) at UNSW Canberra. He completed his B.Tech and MS from IIT Madras and PhD in Mechanical Engineering from University of Tasmania. He has worked in HAL Bangalore for four years and six years in research positions at University of Toronto and NRC of Canada, prior to taking up the academic position at UNSW in 1994. He has published over 175 papers in International Journals and Conferences. His main research interests are Composite Materials, Impact Dynamics, Vibrations and Structural Health Monitoring. He has been a visiting professor at PSG Tech for the last two years.



**Dr. HONGXU WANG** is a Research Associate in the School of Engineering and Information Technology (SEIT) at UNSW Canberra. He obtained his doctoral degree in Mechanical Engineering from UNSW Canberra in 2017 on Impact Behaviour of UHMWPE Woven Fabrics and Fabric-Reinforced Composite Laminates. Dr Wang's main research interests include impact dynamics, composite materials, 3D printed lattice structures, functionally graded aluminium foams, and simulation of dynamic behaviour of composite structures under low velocity and ballistic impacts.