

Armour Materials: From Steel to Biomimetic System

Lecturer

Dr. Mehdi Derradji is an associate professor at the Laboratory Engineering, Process "Ecole Militaire Polytechnique". Dr. Derradji conducts researches in polymer chemistry and materials chemistry. He also has interests nanomaterials and their applications. Mehdi has published over 108 scientific papers in international peerreviewed journals, book chapters, and 1 book. Besides, he has successfully supervised many engineers, MSc, and doctoral students.

Abstract

The history of Armour is as old as the evolution of mankind. It was an intrinsic habitat of humanity to protect and shield themselves from various critical environments and protagonist as well. But the development of high speed projectiles and explosive materials have reconstructed the dynamics of the battlefield, which further advocated the augmentation of the advanced ballistic protection system that are damage resistant, flexible, light weight with efficient energy absorbing capacity. Steel was the most preferred materials in battlefield for our ancestors, but in the last two decades, new design strategies and materials including fibers, composites, laminates, ceramics, and bioinspired materials etc. have been extensively exploited accomplish the requirement of modern military operation, technology driven war tactics and current terror threats.