

Preface

This book compiles papers submitted under the scope of AuxDefense 2020 — 2nd World Conference on Advanced Materials for Defense [Online Edition]. This conference was focused on the latest scientific and technical novelties in advanced materials for Defense. The conference brought together several universities, research and technological centers, companies, and all those interested in innovative solutions for this very high-demanding field. AUXDEFENSE2020 was focused on advanced materials research, including CBRN detection and protection, personal protective equipment, smart textiles and composites, multiscale/multigrade materials, ballistic and blast materials, impact and energy absorption materials, between others. The conference aimed to represent a virtual forum for exchanging ideas, presenting the latest developments and trends, proposing new solutions and promoting international collaborations.

In this book, four important topics are described mainly related to: 1) CBRN protection, detection and decontamination; 2) advanced materials for personal protective equipment; 3) composite materials for military applications and 4) protection of high-strength materials. Reactive materials capable of degrading chemical threats, second skin systems produced by electrospinning, chemical and radiological sensors for detection in CBRN scenarios, and heavy metal ions sensors have been discussed in this book. Also, high extensibility and super toughness fibrous materials, thermal camouflage clothing, thermal regulation systems and epidermal virtual reality systems were presented. This book is also enriched with the potential of fibrous composites for military constructions, composites for naval applications, and biocomposites performance under impact. Finally, coatings for the protection of high-strength substrates and the effect of heat treatments in high-strength materials are also explored.

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Diana Ferreira
Raul Fanguero
University of Minho