

XXIII Italian Group of Fracture Meeting, IGFXIII

Editorial



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The Italian Group of Fracture – Gruppo Italiano Frattura (IGF, www.gruppofrattura.it) – was founded in 1982. The IGF is a non-profit association actively operating in the area of fracture of materials, components and structures with the aim of disseminating knowledge and promoting effective interactions between researchers and industrialists. The IGF's activities cover three main areas, i.e., linear-elastic/elasto-plastic fracture mechanics, structural integrity and material science. Since 1982 the IGF has organized numerous scientific meetings, workshops, conferences and high-level courses not only to help understanding those processes leading to materials' breakage, but also to help investigating the accuracy and reliability of those methodologies specifically devised to model the fracture phenomena. Since 2007, the IGF has been the publisher of Frattura ed Integrità Strutturale – The International Journal of the Italian Group of Fracture, i.e., an open source journal collecting technical/scientific articles authored not only by Italian but also by international researchers.

In 2015 the Italian Group of Fracture (IGF) organised the XXIII National Conference in Favignana, a picturesque little island near Sicily. Even though in recent years the IGF has supported several international workshops and conferences, the IGF National meeting held in Favignana was the first one run as an international event. This resulted in numerous contributions coming from all over the world.

The conference covered all the aspects of fracture and structural integrity. A short and non-exhaustive list of the conference topics is as follows. Analytical, computational and physical Models; Biomaterials and Wood Fracture and Fatigue; Biomechanics; Ceramics Fracture and Damage; Composites; Computational Mechanics; Concrete & Rocks; Creep Fracture; Damage Mechanics; Damage and fracture in materials under dynamic loading; Durability of structures; Environmentally Assisted Fracture; Failure Analysis and Case Studies; Fatigue - Crack Growth (all

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materials); Fatigue Resistance of metals; Fatigue of Metals – Very High Cycle; Failure Analysis and Forensic Engineering; Fractography and Advanced metallography; Fracture and Fatigue at Atomistic and Molecular Scales; Fracture and fatigue testing systems; Fracture under Mixed-Mode and Multiaxial Loading; Fracture vs. Gradient Mechanics; Functional Gradient Materials; Impact & Dynamics; Fundamentals of cohesive zone models; History of Fracture Mechanics and Fatigue; Innovative Alloys; Linear and Nonlinear Fracture Mechanics; Materials mechanical behaviour and image analysis; Mesomechanics of Fracture; Micromechanisms of Fracture and Fatigue; Multi-physics and multi-scale modelling of cracking in heterogeneous materials; Multiscale Experiments and Modelling; Nanostructured Materials; Non-destructive Examination; Physical Aspects of Brittle Fracture; Physical Aspects of Ductile Fracture; Polymers Fracture and Fatigue; Probabilistic Fracture Mechanics; Reliability and Life Extension of Components; Repair and retrofitting: modelling and practical applications; Sandwiches, Joints and Coatings; Smart Materials; Structural Integrity; Temperature Effect; Thin Films.

The Guest Editors selected 65 articles for this issue of *Procedia Engineering* and they wish to warmly thank all the authors for the quality of their contributions. We also would like to extend our heartfelt gratitude to the IGF ExCo members that diligently reviewed all the submitted articles: Vittorio Di Cocco, Angelo Finelli (Treasurer), Donato Firrao (IGF Vice President), Carmine Maletta, Giacomo Risitano, Andrea Spagnoli. Last, but not least, the Guest Editors wish to warmly thank Antonino Pasta and Tommaso Ingrassia for their useful help in the event organization.

We would like to conclude by thanking the large number of Italian and non-Italian participants joining us in Favignana: this vibrant community made the XXIII National Conference a unique and unrepeatable event.

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