

Preface

The innovative assembly and materials junction processes result in multi-materials components with different mechanical behavior, with various electrical and optical properties must meet the technological challenges to improve product performance, relief structures, reducing cycle times and process control. The research efforts are principally focused on the effect of the forming parameters of very diverse processes (forming, solid phase (friction) or liquid (TIG, SMAW, etc.) brazing and additive manufacturing, materials implantation and deposition) on the microstructural aspect of the junction ensuring the cohesion and required properties of the resulting multi-material assemblies.

The modeling of the behavior of these materials, based on a multi-scale approach is used to obtain information on the behavior of structures during the formatting or service. The developed models provide valuable data to facilitate decision-making techniques and thus reduce the time and the cost of realization.

The interest of this volume is the understand the influence of processing parameters and changes in assembly operations on the properties of the finished parts.

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