The 4th International Conference on Welding, Non Destructive Testing and Materials and Alloys Industry (IC-WNDT-MI'14)

2014

Elaboration Et Caractérisation Des Composites Thermostructuraux Utilisés Dans L'industrie Aéronautique

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Abstract : Considering the needs for light, resistant, reliable materials and with lower costs for the aeronautic industry, we choose the development of thermostructural composite materials for applications in extreme conditions: at high temperatures, under mechanical and thermal constraints, in oxidizing media and under irradiation. These materials are mainly used in structural applications at high temperature, where their use is considered in certain parts of engines of planes, or in braking containing carbon which to avoid metal braking. These materials can be used in other applications (Car, building, electricity, industrial plants…). For the environmental point of view , we plan to study the development of the thermostructural composites by ensuring the properties sought in the finished product, starting from silicon carbide fibers of first generation, or starting from carbon fibers, and with combination of two processes gas way and ceramic way. This work will combine the implementation of processes, the characterization (composition and microstructure) of materials and the study of their physico-chemical and mechanical behavior. In this project, we are interested in one hand, in the study and application of new ways of composite synthesis of ceramic and carbon and on the other hand, the understanding mechanisms and phenomena of these processes

Keywords : composite, thermostructural, ceramic, carbon characterization, mechanical, thermal