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22NOVEL METAL/COMPOSITE BONDING METHODABSTRACT OF THE DISCLOSURE

The present invention related to a method for providing a composite structure and the composite structure formed thereby. The method broadly comprises the steps of: providing a core structure formed from a non-metallic composite material in a substantially uncured state; applying a fluoroelastomer film in a substantially uncured state over surface portions of said core structure; placing a metallic structure over a portion of said core structure, said metallic structure having inner surfaces which contacts said fluoroelastomer film; and molding said composite structure under conditions of heat and pressure for a time sufficient to co-cure said fluoroelastomer film and said non-metallic core structure material and to form a bond between said fluoroelastomer film and said inner surfaces of said metallic structure. The method of the present invention may be used to manufacture original metal/composite structures as well as to refurbish metal/composite structures such as fan exit guide vanes for jet engines.

Figure 1

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