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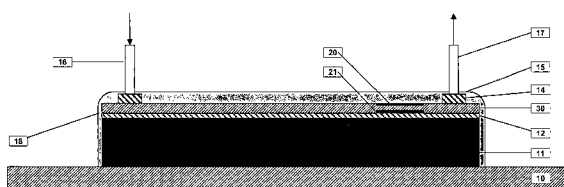
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(54) Title: VARTM FLOW MODIFICATIONS FOR LOW VISCOSITY RESIN SYSTEMS

Fig. 2



10: Mold surface
11: Fibrous reinforcement (preform)
12: Peel ply
14: Secondary resin distribution media
15: Vacuum bag
16: Resin inlet
17: Vacuum outlet
18: air-tight cavity
20: Resin flow control structure (above)
21: Resin flow control structure (below)
30: Resin distribution media

(57) Abstract: A vacuum-assisted resin transfer molding (VARTM) method is disclosed, the method comprising: providing a vacuum-assisted resin transfer mold assembly comprising a mold having a first mold surface and a second mold surface arranged to enclose a laminate assembly within a space between the first and second mold surfaces when the laminate assembly is placed on the first mold surface; providing a laminate assembly comprising a laminate pre-form, a peel ply, and a resin distribution media pervious to the flow of a resin, the laminate pre-form having first and second surfaces, the first surface of the pre-form positioned to be in contact with the first mold surface, the peel ply positioned such that the second surface of the laminate pre-form is in contact with the peel ply, and the resin distribution media positioned to be contained within the first and second mold surfaces; positioning at least one resin flow control structure to modify the flow of resin within the resin distribution media; providing at least one inlet and at least one outlet in the laminate assembly such that the resin can be introduced into the assembly through the inlet; arranging and sealing the second mold surface to enclose the laminate assembly within the space between the first and second mold surfaces such that a vacuum can be pulled on the laminate assembly contained within the space between the first and second mold surfaces; applying a vacuum to the mold assembly; allowing the resin to flow into the laminate assembly through the at least one inlet such that the resin

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flows into the resin distribution media; allowing the resin to flow out of the laminate assembly through the at least one outlet; and allowing the resin to cure in the laminate assembly to form a laminate material. An article of manufacture made by said VARTM method.