

عنوان مقاله:

Bi-stable hybrid laminate: effect of geometry and AL layer on cured shape

محل انتشار:

هجدهمین کنفرانس انجمن هوافضای ایران (سال: 1398)

تعداد صفحات اصل مقاله: 5

نویسندگان:

M Fazli - *PhD candidate Department of Aerospace Engineering, Centre of Excellence in Computational Aerospace Engineering, Amirkabir University of Technology, Hafez Avenue, Tehran, Iran*

m.h.sadr - *Associated Prof Department of Aerospace Engineering, Centre of Excellence in Computational Aerospace Engineering, Amirkabir University of Technology, Hafez Avenue, Tehran, Iran*

h Ghashochi-Bargh - *Assistant Prof Department of Industrial, Mechanical and Aerospace Engineering, Buein Zahra Technical University, Buein Zahra, Qazvin, Iran*

خلاصه مقاله:

Adaptive structures are the base for active or passive control that make continues deformation in various condition. Some researches investigate the use of bi-stable composite laminates connected to same bi-stable section or symmetric plates to make variable stiffness or adaptive structure that used in aerospace application such as aircraft structure or space reflector antenna. Hybrid bi-stable composite laminates consist of unsymmetrical composite laminate and AL layer in one side of laminate have two stable shape. In this paper, thermally induced hybrid bi-stable composite laminates experimentally and numerically are investigated. The effect of the temperature change on the potential multiple shapes of hybrid laminates in two geometry and effect of AL layer are studied in detail. Experimental investigation are used for comparison with finite element (FE) model of hybrid laminate. The obtained experimental results show the same trend as the numerical results and show a good agreement. In addition the present experimental investigations show how a similar process can be used to generate the multi-stable laminates in unsymmetrical unidirectional hybrid laminates and show the importance of multi-stable hybrid laminate in morphing structures.

کلمات کلیدی:

.Bi-stable hybrid laminate - adaptive structures

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1015219>

