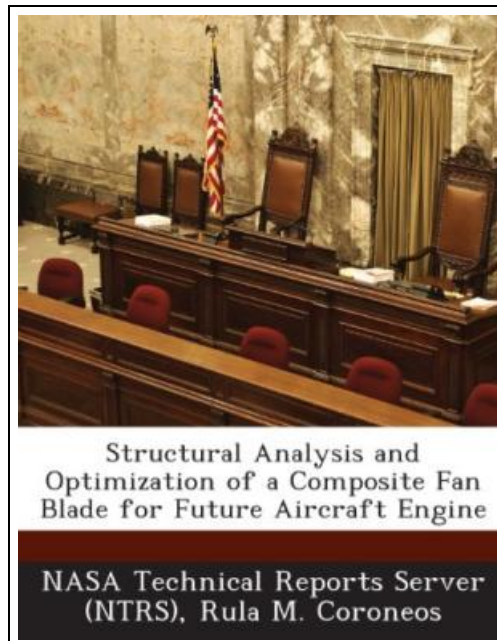


Structural Analysis and Optimization of a Composite Fan Blade for Future Aircraft Engine



Filesize: 5.67 MB

Reviews

A whole new eBook with a new standpoint. Better than never, though i am quite late in start reading this one. I discovered this publication from my i and dad advised this publication to discover.

(Meredith Hoppe)

STRUCTURAL ANALYSIS AND OPTIMIZATION OF A COMPOSITE FAN BLADE FOR FUTURE AIRCRAFT ENGINE

[DOWNLOAD](#)

To save **Structural Analysis and Optimization of a Composite Fan Blade for Future Aircraft Engine** eBook, you should follow the button below and download the document or get access to other information that are relevant to STRUCTURAL ANALYSIS AND OPTIMIZATION OF A COMPOSITE FAN BLADE FOR FUTURE AIRCRAFT ENGINE book.

Bibliogov, United States, 2013. Paperback. Book Condition: New. 246 x 189 mm. Language: English . Brand New Book ***** Print on Demand *****.This report addresses the structural analysis and optimization of a composite fan blade sized for a large aircraft engine. An existing baseline solid metallic fan blade was used as a starting point to develop a hybrid honeycomb sandwich construction with a polymer matrix composite face sheet and honeycomb aluminum core replacing the original baseline solid metallic fan model made of titanium. The focus of this work is to design the sandwich composite blade with the optimum number of plies for the face sheet that will withstand the combined pressure and centrifugal loads while the constraints are satisfied and the baseline aerodynamic and geometric parameters are maintained. To satisfy the requirements, a sandwich construction for the blade is proposed with composite face sheets and a weak core made of honeycomb aluminum material. For aerodynamic considerations, the thickness of the core is optimized whereas the overall blade thickness is held fixed so as to not alter the original airfoil geometry. Weight is taken as the objective function to be minimized by varying the core thickness of the blade within specified upper and lower bounds. Constraints are imposed on radial displacement limitations and ply failure strength. From the optimum design, the minimum number of plies, which will not fail, is back-calculated. The ply lay-up of the blade is adjusted from the calculated number of plies and final structural analysis is performed. Analyses were carried out by utilizing the OpenMDAO Framework, developed at NASA Glenn Research Center combining optimization with structural assessment.



[Read Structural Analysis and Optimization of a Composite Fan Blade for Future Aircraft Engine Online](#)



[Download PDF Structural Analysis and Optimization of a Composite Fan Blade for Future Aircraft Engine](#)

See Also



[PDF] Children s Educational Book: Junior Leonardo Da Vinci: An Introduction to the Art, Science and Inventions of This Great Genius. Age 7 8 9 10 Year-Olds. [Us English]

Follow the hyperlink below to download "Children s Educational Book: Junior Leonardo Da Vinci: An Introduction to the Art, Science and Inventions of This Great Genius. Age 7 8 9 10 Year-Olds. [Us English]" PDF document.

[Save eBook »](#)



[PDF] Children s Educational Book Junior Leonardo Da Vinci : An Introduction to the Art, Science and Inventions of This Great Genius Age 7 8 9 10 Year-Olds. [British English]

Follow the hyperlink below to download "Children s Educational Book Junior Leonardo Da Vinci : An Introduction to the Art, Science and Inventions of This Great Genius Age 7 8 9 10 Year-Olds. [British English]" PDF document.

[Save eBook »](#)



[PDF] With Chatwin: Portrait of a Writer

Follow the hyperlink below to download "With Chatwin: Portrait of a Writer" PDF document.

[Save eBook »](#)



[PDF] Weebies Family Halloween Night English Language: English Language British Full Colour

Follow the hyperlink below to download "Weebies Family Halloween Night English Language: English Language British Full Colour" PDF document.

[Save eBook »](#)



[PDF] Cloverleaf Kids: Kids and adults alike will enjoy these hilarious stories and antics of me,my siblings and our friends growing up in a small town in . over & over and always got a good laugh.

Follow the hyperlink below to download "Cloverleaf Kids: Kids and adults alike will enjoy these hilarious stories and antics of me,my siblings and our friends growing up in a small town in . over & over and always got a good laugh." PDF document.

[Save eBook »](#)



[PDF] Gluten-Free Girl and the Chef: A Love Story with 100 Tempting Recipes

Follow the hyperlink below to download "Gluten-Free Girl and the Chef: A Love Story with 100 Tempting Recipes" PDF document.

[Save eBook »](#)