

Carbon Fibre Reinforced Composites for the Tuning Structure of LHC RF Cavities



Filesize: 3.53 MB

Reviews

This book may be worth buying. I have read and i am confident that i am going to planning to go through once more once again in the future. Its been written in an exceptionally easy way and it is simply soon after i finished reading this publication in which actually altered me, modify the way i believe.

(Faye Shanahan)

CARBON FIBRE REINFORCED COMPOSITES FOR THE TUNING STRUCTURE OF LHC RF CAVATIES



To save **Carbon Fibre Reinforced Composites for the Tuning Structure of LHC RF Cavaties** PDF, you should access the web link beneath and download the file or get access to additional information which are related to CARBON FIBRE REINFORCED COMPOSITES FOR THE TUNING STRUCTURE OF LHC RF CAVATIES book.

Diplom.De Jun 1997, 1997. Taschenbuch. Book Condition: Neu. 210x148x8 mm. This item is printed on demand - Print on Demand Titel. Neuware - Diploma Thesis from the year 1997 in the subject Materials Science, grade: 1,0, Technical University of Braunschweig (Unbekannt), language: English, abstract: Inhaltsangabe:Abstract: The suitability of different materials for the tuning structure of the LHC rf cavities is evaluated. The structure spanning the temperature interval from room to cryogenic is subjected to mechanical loading, and radiation. A filament wound tube reinforced with high-strength carbon fibres is considered to be most appropriate. Design calculations are performed using laminate theory. The safety margin for a cylindrical filament wound tube under the given mechanical and thermal loading conditions is calculated for different winding angles. The calculations indicate that the thermal load is causing shear and transverse stresses which are more critical than the stresses due to the mechanical load. A fatigue test is performed with a prototype tube under thermal and mechanical working conditions as they are estimated for LHC. Before and after the fatigue test, non-destructive testing methods (ultrasonic examination, microscopy, and geometry measurements) are employed to evaluate the material condition before and after the fatigue test. All three non-destructive tests indicate that the prototype tube withstood the fatigue test damage free. No advice on fibre breakage, delaminations, or matrix micro-cracking has been found. Inhaltsverzeichnis:Table of Contents: 1.Introduction1 2.Background3 2.1CERN3 2.2CERN's Future Project LHC4 2.3RF Cavities5 2.4Tuning of Cavities7 3.Material and Geometry11 3.1Mechanical Load, Life Expectancy12 3.2Thermal Load13 3.3Radiation Resistance13 3.4Choice of Material14 3.5Choice of Structure17 4.Design Calculations21 4.1Mechanics of Fibre-Reinforced Composites21 4.2Calculation of Stresses and Strains23 4.2.1Temperature Distribution23 4.2.2Stresses and Strains26 4.3Failure Analysis34 5.Testing Methods37 5.1Destructive.37 5.1.1Tensile Properties37 5.1.2In-Plane Shear Properties385.2Non-Destructive Testing38 5.2.1Ultrasonic Testing39 5.2.2Radiography43 5.2.3Acoustic-Emission44 5.2.4Acousto-Ultrasonic Testing45 5.2.5Thermography46 5.2.6Other Methods47 6.Testing49 6.1Non-Destructive Material Tests49 6.1.1Microscopy of End-Sections50 6.1.2Geometry50...



[Read Carbon Fibre Reinforced Composites for the Tuning Structure of LHC RF Cavaties Online](#)



[Download PDF Carbon Fibre Reinforced Composites for the Tuning Structure of LHC RF Cavaties](#)



[Download ePub Carbon Fibre Reinforced Composites for the Tuning Structure of LHC RF Cavaties](#)

Other Kindle Books



[PDF] **Edge] the collection stacks of children's literature: Chunhyang Qiuyun 1.2 --- Children's Literature 2004(Chinese Edition)**

Access the web link under to get "Edge] the collection stacks of children's literature: Chunhyang Qiuyun 1.2 --- Children's Literature 2004(Chinese Edition)" PDF document.

[Read eBook »](#)



[PDF] **Grandpa Spanielson's Chicken Pox Stories: Story #1: The Octopus (I Can Read Book 2)**

Access the web link under to get "Grandpa Spanielson's Chicken Pox Stories: Story #1: The Octopus (I Can Read Book 2)" PDF document.

[Read eBook »](#)



[PDF] **Dom's Dragon - Read it Yourself with Ladybird: Level 2**

Access the web link under to get "Dom's Dragon - Read it Yourself with Ladybird: Level 2" PDF document.

[Read eBook »](#)



[PDF] **Children s Handwriting Book of Alphabets and Numbers: Over 4,000 Tracing Units for the Beginning Writer**

Access the web link under to get "Children s Handwriting Book of Alphabets and Numbers: Over 4,000 Tracing Units for the Beginning Writer" PDF document.

[Read eBook »](#)



[PDF] **Bully, the Bullied, and the Not-So Innocent Bystander: From Preschool to High School and Beyond: Breaking the Cycle of Violence and Creating More Deeply Caring Communities**

Access the web link under to get "Bully, the Bullied, and the Not-So Innocent Bystander: From Preschool to High School and Beyond: Breaking the Cycle of Violence and Creating More Deeply Caring Communities" PDF document.

[Read eBook »](#)



[PDF] **My Friend Has Down's Syndrome**

Access the web link under to get "My Friend Has Down's Syndrome" PDF document.

[Read eBook »](#)



[PDF] The Tale of Jemima Puddle-Duck - Read it Yourself with Ladybird: Level 2

Click the link listed below to download "The Tale of Jemima Puddle-Duck - Read it Yourself with Ladybird: Level 2" PDF document.

[Read ePub »](#)



[PDF] Funny Poem Book For Kids - Cat Dog Humor Books Unicorn Humor Just Really Big Jerks Series - 3 in 1 Compilation Of Volume 1 2 3

Click the link listed below to download "Funny Poem Book For Kids - Cat Dog Humor Books Unicorn Humor Just Really Big Jerks Series - 3 in 1 Compilation Of Volume 1 2 3" PDF document.

[Read ePub »](#)



[PDF] Read Write Inc. Phonics: Green Set 1 Storybook 2 My Dog Ned

Click the link listed below to download "Read Write Inc. Phonics: Green Set 1 Storybook 2 My Dog Ned" PDF document.

[Read ePub »](#)



[PDF] Big Machines - Read it Yourself with Ladybird: Level 2

Click the link listed below to download "Big Machines - Read it Yourself with Ladybird: Level 2" PDF document.

[Read ePub »](#)



[PDF] Symphony No.2 Little Russian (1880 Version), Op.17: Study Score

Click the link listed below to download "Symphony No.2 Little Russian (1880 Version), Op.17: Study Score" PDF document.

[Read ePub »](#)



[PDF] Rumpelstiltskin - Read it Yourself with Ladybird: Level 2

Click the link listed below to download "Rumpelstiltskin - Read it Yourself with Ladybird: Level 2" PDF document.

[Read ePub »](#)