

J.C. Thesken Ph D. PUBLICATIONS

Thesis

Ph.D. 1995

"Dynamic Fracture and Delamination in Composites," Department of Solid Mechanics, Kungliga Tekniska Hogskolan, Stockholm, Sweden

Tech. Licenciate 1989

"Dynamic fracture analysis with variable order singular finite elements," Department of Solid Mechanics, Kungliga Tekniska Hogskolan, Stockholm, Sweden

M.S. 1984

"The effects of microstructure on the notched LCF response of Inconel 718 at 800 °F"
University of Cincinnati, 1984

Books/Monograms/Special Issues

2003

Handbook of Moiré Measurement: L. G. Melin, J. C. Thesken, S. Nilsson and L. R. Benckert, "Tensile impact delamination of a cross-ply interface studied by moiré photography", In "Handbook of Moiré Measurement", C.A. Walker, Ed., pp. 442-454, Institute of Physics Publishing, Bristol and Philadelphia, (2003).

Journal

2003

1. J. C. Thesken, C. L. Bowman, S. M. Arnold, and R. C. Thompson, (2003) "Time-Temperature Dependent Response of Filament Wound Composites for Flywheel Rotors," Composite Materials: Testing and Design Fourteenth Volume, ASTM STP 1436, C.E. Bakis, Ed., ASTM International, West Conshohocken, PA.

1996

2. T. Ireman, J.C. Thesken, E. Greenhalgh, R. Sharp , M. Gadke, S. Maison, Y. Ousset, F. Roudolff and A. La Barberra (1996) "Damage propagation in composite structural elements - coupon experiments and analyses" Composite Structures, Special issue: Group for Aeronautical Research and Technology in Europe-"Damage Tolerance" 36,3/4, 209-221.
3. R. Olsson, J.C. Thesken, F. Brandt, N. Jonsson, and S. Nilsson (1996) "Investigations of delamination criticality and the transferability of growth criteria" Composite Structures, Special issue: Group for Aeronautical Research and Technology in Europe (GARTEUR)-"Damage Tolerance" 36, 3/4, 209-221.

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4. J. C. Thesken (1995) "A Theoretical and Experimental Investigation of Dynamic Delamination in Composites" Fatigue Fract. Engng Mater. Struct., 18, 10, 1133-1154.

5. G. Melin, J. C. Thesken, S. Nilsson, and L. R. Benckert (1995) "Tensile Impact Delamination of a Cross-Ply Interface Studied by Moire Photography" *Fatigue Fract. Engng Mater. Struct.*, 18, 10, 1101-1114.

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6. J. M. Huntley, M. B. Whitworth, J. E. Fields, L. R. Benckert, M. Sjodahl, J. C. Thesken and A. Henriksson (1993) "High Resolution Moire Photography: application to impact and dynamic fracture of polymers and composites" *Impact and Dynamic Fracture of Polymers and Composites*, ESIS Publication 19, Ed. J. G. Williams and A.Pavan, Sardinia, Italy.
7. K. F. Nilsson, J. C. Thesken, P. Sindelar, A. E. Giannakopoulos and B. Storakers, (1993) "Theoretical and experimental investigation of buckling induced delamination growth" *Journal of Mechanics and Physics of Solids*, vol 41, no 4, 749-782.

1991

8. J.C. Thesken and P. Gudmundson (1991) "Application of a Moving Variable Order Singular Element to Dynamic Fracture Mechanics", *Int. J. of Fracture Mechanics*, 52, 47-65.

1989

9. B.R. Bass, J. Keeney-Walker, T.L. Dickson, C.E. Pugh, C. W. Schwartz, and J.C. Thesken (1989) "Applications of ADINA to Viscoplastic-Dynamic Fracture Mechanics Analysis" *Computers and Structures*, 32, 815-824.

1987

10. J.C. Thesken and P. Gudmundson (1987) "Applications of a Variable Singular Element to Dynamic Fracture Mechanics" *Computational Mechanics*, 2, 307 - 316.

1983

11. D. Krueger, J.C. Thesken , and S. D.Antolovich (1983) "The Effect of Microstructure on the Fatigue Behavior of IN718" *Journal of Metals* 35: (8) A70-A70.

NASA Technical Reports

2004

J. C. Thesken, C. L. Bowman, S. M. Arnold and R. C. Thompson (2004) "Time-Temperature Dependent Response of Filament Wound Composites for Flywheel Rotors" NASA/TM – 2004-212102, January 2004.

2002

J.C. Thesken, C. Bowman and S. M Arnold, (2002) "Compressive experiments provide time dependent material data essential for the durability analysis of composite flywheels" 2002 NASA R&T Report

J.C. Thesken, B. A. Lerch and S. M. Arnold (2002) "Particulate Titanium Matrix Composites show promise for space propulsion applications" 2002 NASA R&T Report.

J. C. Thesken, E. E. Shin, J. Fink and J. K. Sutter (2002) "High Temperature Polymer Composites for Space Propulsion Applications" 2002 NASA R&T Report

Conference Proceedings and Presentations

2004

1. J.C. Thesken, et al (2004)"Thermomechanical fatigue of polyimide composites in reusable propulsion systems" SAMPE 2004, May 16-20, Long Beach, CA.
2. J.C. Thesken, et al (2004)"Design analysis of a composite combustion chamber support" (ITAR restricted) SAMPE 2004, May 16-20, Long Beach, CA.

2003

3. C. L. Bowman, J. C. Thesken, K. C. Chuang, and J. R. Ellis (2003) "Mechanical Characterization and Rapid Heating Response of 2-D and 3-D Polyimide-Matrix Composites for Reusable Launch Vehicles", JANNAF 27th Airbreathing Propulsion Subcommittee Meeting, December 1-5, 2003, Colorado Springs, CO.
4. J. C. Thesken, M. Melis, E. Shin, J. Sutter and J. Fink (2003) "Lightweight Design of a Composite Combustion Chamber Support" (closed paper) 35th ISTC SAMPE, Dayton, OH.
5. J. C. Thesken, M. Melis, E. Shin, J. Sutter and J. Fink (2003)"Design analysis of a Combustion Chamber Stiffened by Polymer Composite Sandwich" (closed paper) ICCM-14, July 14-18, San Diego, CA.
6. J. C. Thesken, E. E. Shin, J. K. Sutter, C. Burke, (2003) "Durability of Polyimide Composites subjected to thermo-mechanical fatigue in reusable propulsion systems", ICCM-14, July 14-18, San Diego, CA..
7. J. C. Thesken, M. Melis, E. Shin, J. Sutter, Chris Burke and Jeff Fink (2003) "Design analysis and thermomechanical fatigue of a polyimide composite for combustion chamber support" High Temple Workshop 23, Feb.10-13, Jacksonville, FL.
8. E. E. Shin, J. C. Thesken, J. K. Sutter et al (2003) "Effects of Fiber Reinforcement Architecture on the Hygrothermal-Mechanical Performance of Polyimide Matrix Composites for Aeropropulsion Applications" ICCM-14, July 14-18, San Diego, CA..
9. C.L. Bowman, J.C. Thesken, and K.C. Chuang (2003) "Reinforcement Architecture and Rapid Heating Effects in Polyimide-Matrix Composites" 35th ISTC SAMPE, Dayton, OH.
10. E. E. Shin, J. C. Thesken, J. K. Sutter et al (2003)"Fiber Reinforcement Architectures of Polymer Matrix Composites on the Hygrothermal-Mechanical Performance for Aeropropulsion Applications" High Temple Workshop 23, Feb. 10-13, Jacksonville, FL.
11. W. D. Bertelsen, E. E. Shin, J. C. Thesken, J. K. Sutter, and R. Martin(2003) "Plate Deformation Behavior of Polymer Matrix Composite-Ti Honeycomb-Metal Sandwiches for Pressurized Propulsion Component Applications" (closed paper) ICCM-14, July 14-18, San Diego, CA.

2002

12. J. E. Fink, B. Shapey, E. E. Shin, J. K. Sutter, J. C. Thesken, and D. Papadopoulos, G. Wonacott and C. Benzie (2002) "Initial Assessment of High Temperature Polymer Matrix Carbon Fiber Composites for 3rd Generation Liquid Propellant Rocket Engine Applications" High Temple Workshop 22, Sante Fe, NM.
13. E. E. Shin, J. K. Sutter, H. Eakin, L. Inghram, L. McCorkle, D. Scheiman, D. Papadopoulos, J. C. Thesken, J. E. Fink (2002) "Evaluation of Graphite Fiber/Polyimide PMCs from Hot Melt vs Solution Prepreg" High Temple Workshop 22 , Sante Fe, NM
14. J. C. Thesken, M. G. Castelli and J.R. Ellis (2002) "Hygrothermal and Mechanical Fatigue of Polymer Matrix Composites for Propulsion Applications" Eighth International Fatigue Congress, Stockholm, Sweden.
15. C. L. Bowman, J. C. Thesken, K. C. Chuang, and C. P. Arendt, "Graphite fiber /polyimide composites subjected to moisture and rapid heating", SAMPE 2002 Long Beach, CA
16. C. L. Bowman, J. C. Thesken, K. C. Chuang and C. P. Arendt (2002)"Contrasting stitched and unstitched graphite fiber/polyimide composites for RLV applications" High Temple Workshop 22, Sante Fe, NM.

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17. M.Castelli and J. C. Thesken (2001) "Fatigue damage and compressive residual strength of a woven PMC subjected to cyclic hygrothermal conditioning", Proceedings for the International Conference on Fracture Mechanics-10, HA.
18. C. Bowman, J. Sutter, J.C. Thesken and B. Rice (2001) "Characterization of Graphite Fiber/Polyimide Composites for RLV Applications", SAMPE 2001, Long Beach,CA.
19. J.C. Thesken(1996)"Graphite Crack Gage for Delamination Measurements"
Experimental Mechanics, 36, 388-396.

1996

20. J. C. Thesken (1996) Chapter 13 "Testing of Composite Materials" Course Compendium ; Lecture KTH Solid Mechanics.

1995

21. J.C. Thesken and A. Henriksson (1995) "Acoustic Emission as a Predictor of Delamination Criticality" 5th Int. Symp. on Acoustic Emission from Composite Material, ASNT, Sundsvall, Sweden.
22. A. Henriksson and J. C. Thesken (1995) "Acoustic Emission and Residual Strength in Fatigue Loaded Notched Carbon/Epoxy Composites"5th Int. Symp. on Acoustic Emission from Composite Material, ASNT, Sundsvall, Sweden.
23. J. C. Thesken, S. Nilsson and F. Brandt (1994) "Investigation of Delamination Growth Rates and Criticality along Heterogeneous Interfaces" 19th ICAS September 18-23, Anaheim, CA.

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24. J. C. Thesken, A. Henriksson and F. Brandt (1994) "Acoustic Emission Detecting with Fiber Optic Sensors: Mode I Delamination Growth" FFA TN 1994-38; Aeronautical Research Institute of Sweden, Bromma, Sweden.

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25. J. C. Thesken, A. Henriksson, S. Nilsson and P. Sindelar (1993) "Performance Trials of an EPFI Sensor/System for AE Detection in Composites" FFA TN 1993-8; Aeronautical Research Institute of Sweden, Bromma, Sweden.

1992

26. J. C. Thesken (1992) "Experimental analysis of buckling induced delamination growth within an orthotropic panel" Svensk Mekanikdagar, KTH, Stockholm.

1991

27. J. C. Thesken and Ph. Beguelin(1991) "The Analysis of Mode I Dynamic Delamination Growth in a Composite Strip: Computational and Experimental Methods" ICCM8, HA.
28. J.C. Thesken and Ph. Beguelin (1991) "Mode I Dynamic Delamination in a Composite Strip" EUROMECH COLLOQUIUM 277, Pitea, Sweden.
29. J. C. Thesken, B. R. Bass and J. S. Parrot(1991) "Application of a 2D Moving Finite Element Formulation to Elastic/Viscoplastic Dynamic Fracture Analysis" SMiRT 11, Japan.

1990

30. J. C. Thesken (1990) "Computational Methods for the Analysis of Dynamic Fracture and Delamination" 5th Lausanne Polymer Meeting, Lausanne, CH.