

CURRICULUM VITAE

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VOCATION: Professor
Department of Mechanical Sciences and Engineering
Graduate School of Science and Engineering
Tokyo Institute of Technology

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Employment History

October/2006-Now:

Professor of Tokyo Institute of Technology
Department of Mechanical Sciences and Engineering

February/1994- September/2006:

Associate Professor of Tokyo Institute of Technology

November/1988-January/1994:

Assistant Professor of Tokyo Institute of Technology

April/1986-March/1988:

Researcher of Mitsubishi Heavy Industry in Nagoya Aircraft Work

October/1995-July/1996:

Visiting researcher in University of Florida, USA

Education History

July/1990 : Doctor of Engineering (Tokyo Institute of Technology)

March/1986 : Completion of master course of the graduate school

April/1984 : Entrance into graduate School of Tokyo Institute of Technology

March/1984 : Graduated from Faculty of Engineering of Tokyo Institute of Technology

Awards (17)

2014 Best paper award of JSCM

(The Japan Society of Composite Materials)

2013 Best Paper Award at the 27th annual technical conference on composites,

(American Society for Composites)

2013 Best Paper Award of JSASS

(The Japan Society for Aeronautical and Space Science)

2012 Best Paper Award of JRPS

(The Japan Reinforced Plastics Society)

2011 The 8th Korea-Japan Joint Symposium on Composite Materials Best Paper Award

2011 Best Paper Award of JSCM

(The Japan Society of Composite Materials)

2010 Award of achievement of JAPAN SAMPE

2007 Best Paper Award of JSCM

(The Japan Society of Composite Materials)

2007 Best Paper Award of JSMS
(The Japan Society of Materials Science)
2006 Computational Mechanics Achievement Award of JSME
(The Japan Society of Mechanical Engineering)
2006 Best Paper award of 35th FRP symposium of JSMS,
(The Japan Society of Materials Science)
2005 Best Paper Award of JRPS
(The Japan Reinforced Plastics Society)
2005 Best Paper award of 34th FRP symposium of JSMS,
(The Japan Society of Materials Science)
2004 Best Paper Award of JRPS,
(The Japan Reinforced Plastics Society)
2000 Hayashi Award of JSCM,
(The Japan Society of Composite Materials)
2000 JSMS Young Engineers Award in 29th FRP Symposium,
(The Japan Society of Materials Science)
1989 JSME Young Engineers Award
(The Japan Society of Mechanical Engineering)

Academic Membership

AIAA (Senior member)
MRS
The Japan Society of Mechanical Engineering (JSME) (Fellow member)
The Japan Society of Composite Materials (JSCM) (Fellow member)
The Japan Society of Materials Science (JSMS)
The Japan Society for Aeronautical and Space Science (JSASS)
The Japan Reinforced Plastics Society (JRPS)

Academic Contributions

Technical adviser of the Japanese Ministry of Defense
Executive board member of JSCM
Executive board member of JRPS
Editorial board member of “Journal of Composite Materials”
(Official Journal of American Society of Composites)
Editorial board member of “Composites”
(Official Journal of Polish Society of Composite Materials)
Editorial board member of “eXPRESS Polymer Letters”
Editorial board member of “International Journal of aeronautical and space sciences”
(Official Journal of the Korean Society for Aeronautical and Space Science)

Research activities

1. Self-sensing method for delamination monitoring of graphite/epoxy composites

Carbon fiber is an electrically conductive material. Even in the direction transverse to the fiber direction, electric current flows because of fiber contact. Delamination cracks and matrix cracking of CFRP composites can be detected through measurements of changes in the electrical resistance. This damage detection technique does not require additional sensors; the reinforcement carbon fibers are

used as sensors. Hence, the method of measuring the electrical resistance change of CFRP composites is referred to as a self-sensing method.

Self-sensing CFRP is a multifunctional composite. Using the method, strain sensing, matrix cracking sensing, fiber breakage sensing and delamination sensing were performed. The statistical method enables us to detect actual impact damages and initial defects.

Typical Seven examples of research papers

1. A. Todoroki and H. Suzuki: Health Monitoring of internal delamination cracks for graphite/epoxy by electric potential method, *Applied Mechanics and Engineering*, 5,1, (2000) pp283-294.
2. Akira Todoroki, Yuuki Tanaka and Yoshinobu Shimamura : Delamination monitoring of graphite/epoxy laminated composite plate of electric resistance change method, *Composites Science and Technology*, 62, 9, (2002) pp.1151-1160.
3. Akira Todoroki, Miho Tanaka and Yoshinobu Shimamura : High performance estimations of delamination of graphite/epoxy laminates with electric resistance change method, *Composites Science and Technology*, 63, 13, (2003), pp.1911-1920..
4. Akira Todoroki, Kazuomi Omagari, Yoshinobu Shimamura, Hideo Kobayashi : Matrix crack detection of CFRP using electrical resistance change with integrated surface probes, *Composites Science and Technology*, 66, 11-12, (2006) pp 1539-1545.
5. Piezoresistivity of Unidirectional Carbon/epoxy Composites for Multiaxial Loading: *Composites Science and Technology*,69, 11, (2009)1841-1846.
6. Akira Todoroki, Electric Current Analysis of CFRP using Perfect Fluid Potential Flow, *Transactions of the Japan Society for Aeronautical and Space Sciences*: 55(3), (2012),pp.183-190.
7. Akira Todoroki, Hiroumi Kurokawa, Yoshihiro Mizutani, Ryosuke Matsuzaki and Tetsuo Yasuoka, Self-sensing time domain reflectometry method for damage monitoring of a CFRP plate using a narrow-strip transmission line: *Composites Part B: Engineering*, 58(March), (2014), pp.59-65.

2. Optimizations of composite structures

The use of laminated composite structures in aerospace engineering requires the design of the stacking sequence as well as the dimensions because the mechanical properties of the laminated components strongly depend on the stacking sequences of the laminates. Our research group published a new deterministic method for the optimization of the stacking sequence of composite laminates, named the fractal branch and bound (FBB) method. The FBB method has also been applied to maximization problems of the flutter speed of a laminated composite wing that has multiple local maxima. The FBB method has been extended to the simultaneous optimization of the stacking sequence of multiple laminates. Moreover, the method is coupled with the dimension optimization of stiffened composite panels. MOGA and Kriging surrogate model are adopted and the simultaneous optimizations of dimensions and stacking sequences are performed.

Typical Seven examples of research papers

1. Akira Todoroki, Yuichirou Terada : Improved Fractal Branch and Bound Method for Stacking Sequence Optimizations of Laminated Composite Stiffener, *AIAA J*,42,1,(2004) pp.141-148.
2. Yoshiyasu Hirano, Akira Todoroki :Stacking sequence optimizations for composite laminates using

fractal branch and bound method (Application for Supersonic Panel Flutter Problem with Buckling Load Condition), *Advanced Composite Materials*, 13,2,(2004) pp.89-107.

3. Ryosuke Matsuzaki and Akira Todoroki :Stacking Sequence Optimization Using Fractal Branch and Bound Method for Unsymmetrical Laminates, *Composite Structures*,(2007), 78, 4, pp. 537-550.
4. Masato Sekishiro and Akira Todoroki : New Iteration fractal branch and bound method for stacking sequence optimizations of multiple laminates, *Composite Structures*, 81, 3, (2007), pp. 419-426.
5. Akira Todoroki and Masato Sekishiro: Modified Efficient Global Optimization for a Hat-stiffened Composite Panel with Buckling Constraint, *AIAA J.*, 46, 9,(2008), pp.2257-2264.
6. Akira Todoroki, Takashi Shinoda, Yoshihiro Mizutani and Ryosuke Matsuzaki, New surrogate model to predict fracture of laminated CFRP for structural optimization: *Journal of Computational Science and Technology JSME*, 5(1), (2011), pp.26-37.
7. Akira Todoroki, Takumi Ozawa, Yoshihiro Mizutani, Yoshiro Suzuki, Thermal deformation constraint using response surfaces for optimization of stacking sequences of composite laminates, *Advanced Composite Materials*, 22(4), (2013),pp.265-279.

Published papers

- 1) A.Todoroki, H.Kobayashi, H. Nakamura
Prediction of fatigue crack growth rate in residual stress fields
Key Engineering materials, 51-52, (1991), 367-372.
- 2) H. Kobayashi, Y.Arai, Y.Ohsawa, H.Nakamura, A.Todoroki
Nondestructive Measurement of Welding Residual Stresses by Acusto-elastic Technique and
Prediction of Fatigue Crack Growth,
Transactions of ASME J. of Pressure Vessel Technology, 114(4), (1992),pp.417-421.
- 3) Akira Todoroki, Hideo Kobayashi, Jong Gi Lee
Image Analysis of Delamination Cracks in Carbon-Fibre Composites by Scanning Acoustic Microscopy
Composites Science & Technology, 52,4 (1994) 551-559.
- 4) Y.Shimamura, A.Todoroki, H.Kobayashi
Fractal Property of Matrix Cracking in GFRP Cross-Ply Laminates,
JSME International J., Series A, 38(4), (1995),pp.446-452
- 5) A.Todoroki, K.Watanabe, H.Kobayashi
Application of Genetic Algorithms to Stiffness Optimization of Laminated Composite Plates with
Stress-Concentrated Open Holes,
JSME International J., Series A, 38(4), (1995),pp.458-464.
- 6) A.Todoroki, K.Matsuura, H.Kobayash
Application of Electric Potential Method to Smart Composite Structures for Detecting Delamination
JSME International J., Series A, 38(4),(1995),pp.524-530.]
- 7) A.Todoroki, N.Sasada, M.Miki
Object-Oriented Approach to Optimize Composite Laminated Plate Stiffness with Discrete Ply
Angles,
J. Composite Materials, 30(9), (1996),pp. 1020-1041.
- 8) Akira Todoroki, Raphael T. Haftka
Stacking sequence optimization by a genetic algorithm with a new recessive gene like repair strategy
Composites Part B, 29(3), (1998), pp.277-285.

- 9) Akira Todoroki and Masahumi Sasai
Improvement of Design Reliability for Buckling Load Maximization of Composite Cylinder Using Genetic Algorithm with Recessive-Gene-Like Repair
JSME International J., Series A,42(4), (1999), pp.530-536.
- 10) A.Todoroki and H.Suzuki
Health Monitoring of internal delamination cracks for graphite/epoxy by electric potential method,
Applied Mechanics and Engineering,5(1),(2000), pp.283-294.
- 11) Akira Todoroki, Yoshinobu Shimamura
Damage Monitoring for Semi-Transparent Composites using Luminance of EL Backlight
JSME International Journal, series A, 43(1), (2000), pp.76-82.
- 12) Boyang Liu, Raphael T. Haftka, Mehmet A. Akgun, and Akira Todoroki
Permutation genetic algorithm for stacking sequence design of composite laminates
Computer methods in applied mechanics and engineering, 186(2-4),(2000),pp.357-372.
- 13) Akira TODOROKI
Effect of number of electrodes and diagnostic tool for delamination monitoring of graphite/epoxy laminates using electric resistance change
Composites Science and Technology, 61(13),(2001),pp.1871-1880.
- 14) Yuichiro TERADA, Akira TODOROKI, Yoshinobu SHIMAMURA
Stacking Sequence Optimizations Using Fractal Branch and Bound Method for Laminated Composites
JSME International J., Series A,44(4), (2001), pp.490-498.
- 15) Akira Todoroki, Masafumi Sasai
Stacking Sequence Optimizations Using GA with Zoomed Response Surface on Lamination Parameters
Advanced Composite Materials,11(3),(2002), pp.299-318 .
- 16) Akira Todoroki, Yuuki Tanaka
Delamination identification of cross-ply graphite/epoxy composite beams using electric resistance change method
Composites Science and Technology, 62(5),(2002), pp.629-639.

- 17) Akira Todoroki, Yuuki Tanaka and Yoshinobu Shimamura
Delamination monitoring of graphite/epoxy laminated composite plate of electric resistance change method
Composites Science and Technology, 62(9),(2002),pp.1151-1160.
- 18) Akira Todoroki, Miho Tanaka and Yoshinobu Shimamura
Measurement of orthotropic electric conductance of CFRP laminates and analysis of the effect on delamination monitoring with electric resistance change method
Composites Science and Technology, 62(5),(2002),pp.619-628.
- 19) Akira Todoroki, Kentarou Suenaga and Yoshinobu Shimamura
Stacking Sequence Optimizations using modified global response surface in lamination parameters
Advanced Composite Materials, 12(1),(2003), pp. 35-55.
- 20) Akira Todoroki, Masafumi Sasai
Optimizations of stacking sequence and number of piles for laminated cylinders using GA with intron genes
Advanced Composite Materials, 12(4), (2003),pp.331-344.
- 21) Akira Todoroki, Yasuyuki Tanaka, Yoshinobu Shimamura
Luminance Change Method for Strain and Matrix Cracking Monitoring of Glass/epoxy Composites with EL Backlight
Composites Science and Technology, 63(2), (2003), pp.273-281.
- 22) Akira Todoroki, Miho Tanaka and Yoshinobu Shimamura
High performance estimations of delamination of graphite/epoxy laminates with electric resistance change method
Composites Science and Technology, 63(13),(2003),pp.1911-1920.
- 23) Akira Todoroki, Shintaro Miyatani, Yoshinobu Shimamura
Wireless strain monitoring using electrical capacitance change of tire: part I- with oscillating circuit
Smart Materials and Structures, 12(3),(2003), pp.403-409.
- 24) Akira Todoroki, Shintaro Miyatani, Yoshinobu Shimamura
Wireless strain monitoring using electrical capacitance change of tire: part II- passive
Smart Materials and Structures, 12(3),(2003), pp.410-416.

- 25) A. Todoroki, T. Ishikawa
Design of Experiments for Stacking Sequence Optimizations with Genetic Algorithm using Response Surface Approximation
Composite Structures, 64,3(4),(2004),pp.349-357.
- 26) Akira Todoroki, Yuuki Tanaka, Yoshinobu Shimamura
Multi-probe electric potential change method for delamination monitoring of graphite/epoxy composite plates using normalized response surfaces
Composites Science and Technology, 64(5),(2004), pp.749-758.
- 27) Atushi Iwasaki, Akira Todoroki, Yoshinobu Shimamura, Hideo Kobayashi
Unsupervised Structural Damage Diagnostic Method Using Judgment of Change of Response Surface by Statistical Tool (Application for Damage Detection of Composite Structure)
JSME International Journal, Series A, 47(1), (2004), pp.1-7.
- 28) Atsushi Iwasaki, Akira Todoroki
Delamination Identification of CFRP Structure by Discriminant Analysis Using Mahalanobis Distance
Key Engineering Materials, 270-273, (2004),pp.1859-1865 .
- 29) Takaomi Inada, Yoshinobu Shimamura, Akira Todoroki, Hideo Kobayashi
Development of the Two-Step Delamination Identification Method by Resonant and Anti-Resonant Frequency Changes
Key Engineering Materials, 270-273, (2004),pp.1852-1858 .
- 30) Shimamura, Y., Okajima, Y., Todoroki, A. and Kobayashi, H
Determination of Damaged Region in Composite Structures by Anti-resonant Frequency
Transactions of Materials Research Society of Japan, 28(3),(2003), pp.711-714.
- 31) Akira Todoroki, Miho Tanaka, Yoshinobu Shimamura, Hideo Kobayashi
Effects of Delamination Shape with a Matrix Crack on Monitoring by Electrical Resistance Method
Advanced Composite Materials, 13(2), (2004), pp.107-121.
- 32) Akira Todoroki, Yuichirou Terada
Improved Fractal Branch and Bound Method for Stacking Sequence Optimizations of Laminated Composite Stiffener
AIAA J, Vo.42, No.1, (2004) pp.141-148..

- 33) Akira Todoroki, Yoshinobu Shimamura, Yasuyuki Tanaka
Damage monitoring of Al₂O₃/epoxy laminates with luminance change of transmitted light of EL device
Science and Engineering of Composite Materials, 11(2-3), (2004) ,pp.111-121.
- 34) Yoshiyasu Hirano, Akira Todoroki
Stacking sequence optimizations for composite laminates using fractal branch and bound method
(Application for Supersonic Panel Flutter Problem with Buckling Load Condition)
Advanced Composite Materials, 13(2),(2004),pp.89-107.
- 35) Akira Todoroki, Yusuke Takeuchi, Yoshinobu Shimamura, Atushi Iwasaki and Tsuneya Sugiya
Fracture Monitoring System of Sewer Pipe with Composite Fracture Sensors via the Internet
Structural Health Monitoring, International Journal, 3(1),(2004), pp. 5-17.
- 36) Akira Todoroki, Yuuki Tanaka, Yoshinobu Shimamura
Identifying Delamination in Cross-ply and Quasi-isotropic Beams of CFRP by a Standardized Electrical Resistance Method
Polymers & Polymer Composites, 12(1), (2004), pp.75-85.
- 37) Masahito Ueda, Akira Todoroki, Yoshinobu Shimamura and Hideo Kobayashi
Monitoring Delamination of Laminated CFRP using the Electric Potential Change Method
(Application of normalization method and the effect of the shape of a delamination crack)
Advanced Composite Materials,13(3-4),(2004),pp.311-324.
- 38) Takaomi Inada and Akira Todoroki
Smart Cure Monitoring Method of Carbon/Epoxy Laminates Using Electric Capacitance Change with Applied Alternating Current Frequency
Key Engineering Materials, 297-300,(2005),pp.2903 -2908.
- 39) Ryosuke Matsuzaki and Akira Todoroki
Wireless strain monitoring of tires using electrical capacitance changes with an oscillating circuit
Sensors and Actuators A: Physical,119(2), (2005),pp. 323-331.
- 40) R. Matsuzaki, A. Todoroki, H. Kobayashi and Y. Shimamura
Passive wireless strain monitoring of a tire using capacitance and electromagnetic induction change
Advanced Composite Materials, 14(2),(2005),pp.147-164.

- 41) Masahito Ueda, Akira Todoroki, Yoshinobu Shimamura and Hideo Kobayashi
Monitoring Delamination of Laminated CFRP using the Electric Potential Change Method
(Two-stage monitoring for robust estimation)
Advanced Composite Materials, 14(1), (2005),pp.83-98.
- 42) Yoshinobu Shimamura, Takashi Urabe, Akira Todoroki and Hideo Kobayashi
Electrical Impedance Change Method for Moisture Absorption Monitoring of CFRP
Advanced Composite Materials,13(3-4), (2004),pp.297-310.
- 43) Akira Todoroki, Jyunji Yoshida
Electrical resistance change of unidirectional CFRP due to applied load
JSME International J., Series A, 47(3),(2004), pp. 357-364.
- 44) Akira Todoroki
Electric Resistance Change Method for Cure /Strain/Damage Monitoring of CFRP Laminates
Key Engineering Materials, 270-273 (2004),pp.1812-1820 .
- 45) Masahito Ueda, Akira Todoroki, Yoshinobu Shimamura
Effect of Fiber Volume Fraction on Monitoring Delamination of CFRP Laminates with Electric
Resistance Change Method
Key Engineering Materials,270-273, (2004), pp.1935-1942 .
- 46) Yoshinobu Shimamura, Takashi Urabe, Akira Todoroki, Hideo Kobayashi
Measurement of Moisture Absorption Ratio of FRP Using Micro Polymer Sensor
Key Engineering Materials , 270-273, (2004), pp.1957-1964 .
- 47) Yoshinobu Shimamura, Yoshiharu Miyamoto, Akira Todoroki and Hideo Kobayashi
Simulation of Debonding for Skin/Stiffener Composite Structures
Advanced Composite Materials, 14(1), (2005), pp.63-82.
- 48) Akira Todoroki, Miho Tanaka, Yoshinobu Shimamura
Electrical Resistance Change Method for Monitoring Delaminations of CFRP Laminates: Effect of
Spacing between Electrodes
Composites Science and Technology, 65(1), (2005), pp.37-46.
- 49) Atsushi Iwasaki, Akira Todoroki

Statistic evaluation of modified electric resistance change method for delamination monitoring of CFRP plate

Structural Health Monitoring An International Journal, 4(2),(2005), pp. 119-136.

50) Ryosuke Matsuzaki, Akira Todoroki

Passive Wireless Strain Monitoring of Tyres Using Capacitance and Tuning Frequency Changes
Smart Materials and Structures, 14(4),(2005),561-568.

51) Yoshinobu Shimamura, Keiko Oda, Akira Todoroki, Hideo Kobayashi, and Takaomi Inada

Application of Electric Resistance Change Method to Damage Detection of CFRP Bolted Joints
Key Engineering Materials, 297-300,(2005),pp.653-656.

52) Masato Sekishiro and Akira Todoroki

Extended Fractal Branch and Bound Method for Optimization of Multiple Stacking Sequences of Stiffened Composite Panel
Advanced Composite Materials,15(3),(2006), pp. 341-356.

53) Yoshiyasu Hirano, Akira Todoroki

Stacking-Sequence Optimization of Composite Delta Wing to Improve Flutter Limit Using Fractal Branch and Bound Method
JSME Int. J.,Series A, 48(2), (2005), pp.65-72.

54) Kazuomi Omagari, Akira Todoroki, Yoshinobu Shimamura and Hideo Kobayashi

Detection of Matrix Cracking of CFRP Using Electrical Resistance Changes
Key Engineering Materials, 297-300,(2005),pp.2096-2101.

55) Akira Todoroki, Junji Yoshida

Apparent Negative Piezoresistivity of Single-ply CFRP due to Poor Electrical Contact of Four Probe Method
Key Engineering Materials, 297-300,(2005),pp.610-615.

56) Akira Todoroki, Kazuomi Omagari, Yoshinobu Shimamura, Hideo Kobayashi

Matrix crack detection of CFRP using electrical resistance change with integrated surface probes
Composites Science and Technology, 66(11-12), (2006), pp 1539-1545.

57)Hideo Kobayashi, Akira Todoroki, Toshikazu Oomura, Takeru Sano, Tatsumi Takehana

Ultra-high-cycle fatigue properties and fracture mechanism of modified 2.25Cr–1Mo steel at elevated temperatures- 1Mo steel at elevated temperatures
International Journal of Fatigue 28(11),(2006), pp.1633-1639.

58) Ryosuke Matsuzaki, Akira Todoroki

Wireless detection of internal delamination cracks in CFRP laminates using oscillating frequency changes

Composites Science and Technology, 66(3-4), (2006),pp.407-416.

59) Ryosuke Matsuzaki and Akira Todoroki

Passive Wireless Strain Monitoring of Actual Tire using Capacitance-Resistance Change and Multiple Spectral Features

Sensors & Actuators: A. Physical,126(2) ,(2006), pp.277-286

60) Masahito Ueda and Akira Todoroki

Asymmetrical dual charge EPCM for delamination monitoring of CFRP laminate

Key Engineering Materials, 321-323,(2006) pp.1309-1315.

61) Akira Todoroki, Norihiko Hana and Masahito Ueda

Luminance change method for cure monitoring of GFRP

Key Engineering Materials, 321-323,(2006) pp.1316-1321

62) Akira Todoroki, Kazuomi Omagari and Masahito Ueda

Matrix Crack Detection of CFRP Laminates In Cryogenic Temperature Using Electrical Resistance Change Method

Key Engineering Materials,321-323,(2006), pp.873-876.

63) Yoshinobu Shimamura, Keiko Oda, Akira Todoroki, Masahito Ueda

Detectability of Bearing Failure of Composite Bolted Joints by Electric Resistance Change Method

Key Engineering Materials, 321-323,(2006) ,pp.957-962.

64) Ryosuke Matsuzaki, Motoko Shibata, and Akira Todoroki

Evaluation of dimple treatment for GFRP/metal co-cured joint

Key Engineering Materials,324-325 ,(2006), pp.1729-1732.

65) Masahito Ueda and Akira Todoroki

Noise effect on estimation accuracy of delamination monitoring methods for CFRP laminate using

electric property change

Key Engineering Materials,324-325 (2006), pp.1423-1426.

66) Ryosuke Matsuzaki, Akira Todoroki

Wireless strain monitoring of CFRP laminates using electric resistance change with oscillating circuit

Key Engineering Materials,324-325 (2006), pp.1415-1418.

67)Yoshiyasu Hirano and Akira Todoroki

Damage Identification of Woven Graphite/Epoxy Composite Beams Using the Electrical Resistance Change Method

Journal of Intelligent Material Systems and Structures, 18(3),(2007)p.253-263.

68) Ryosuke Matsuzaki and Akira Todoroki

Stacking Sequence Optimization Using Fractal Branch and Bound Method for Unsymmetrical Laminates

Composite Structures,78(4),(2007), pp. 537-550.

69) Akira Todoroki and Masato Sekishiro

New Iteration fractal branch and bound method for stacking sequence optimizations of multiple laminates

Composite Structures, 81(3), (2007), pp. 419-426.

70)Kosuke Takahashi, Akira Todoroki, Yoshinobu Shimamura, and Atsushi Iwasaki

Statistical Damage Detection of Laminated CFRP Beam Using Electrical Resistance Change Method

Key Engineering Materials,353-358, (2007),pp1330-1333.

71) Ryosuke Matsuzaki and Akira Todoroki

Wireless flexible capacitive sensor based on ultra-flexible epoxy resin for strain measurement of automobile tires

Sensors and Actuators A: Physical, 140 (1),(2007), pp. 32-42.

72) Akira Todoroki, Masahito Ueda, Yoshinobu Shimamura

Damage Monitoring of Thick CFRP Beam Using Electrical Impedance Changes

Key Engineering Materials, 353-358, (2007),pp1298-1301.

73) Yoshinobu Shimamura, Yosuke Yamamura, Akira Todoroki

FRP Fracture Simulation Using Parallel Processing on a PC Cluster
Key Engineering Materials, 353-358, (2007),pp1382-1385.

74) Atsushi Iwasaki, Akira Todoroki, Satoshi Izumi, Shinsuke Sakai
Diagnostic Method for Delamination Monitoring of CFRP Plate Using Kriging Interpolation Method
Key Engineering Materials, 353-358, (2007),pp.1422-1425.

75) K.Yuguchi, A.Iwasaki, Y.Shimamura and A.Todoroki
Monitoring of Delamination of the CFRP Beam by the Smart Structure System Using the SI-F Method
Key Engineering Materials, 353-358, (2007),pp.1427-1430.

76) Akira Todoroki and Masato Sekishiro
Two-Level Optimization of Dimensions and Stacking Sequences for Hat-Stiffened Composite Panel
Journal of Computational Science and Technology, JSME, 1(1),(2007),pp.22-33.

77)Ryosuke Matsuzaki, Akira Todoroki, Kosuke Takahashi
Time-synchronized wireless strain and damage measurements at multiple locations in CFRP laminate using oscillating frequency changes and spectral analysis,
Smart Materials and Structures, 17-5 (2008) pp.1-9.

78)Atsushi Iwasaki, Akira Todoroki, Yoshinobu Shimamura, Tsuneya Sugiya, Satoshi Izumi, Shinsuke Sakai
Damage and Fault Diagnosis of In-service Structure via Statistical Comparison of Relation between Sensor measurements (Damage Diagnosis of in-service Structure under High Noise Environment using Multiple Reference Data)
Journal of Solid Mechanics and Materials Engineering, 2 (8), (2008), pp.1114-1125.

79) Masahito Ueda and Akira Todoroki
Delamination monitoring of CFRP laminate using the two-stage electric potential change method with equivalent electric conductivity
Engineering Fracture Mechanics, 75(9), (2008), pp. 2737-2750.

80) Akira Todoroki
Delamination Monitoring Analysis of CFRP Structures using Multi-Probe Electrical Method
Journal of Intelligent Material Systems and Structures,19(3),(2008), pp. 291 - 298.

- 81) Akira Todoroki and Masato Sekishiro
Stacking Sequence Optimization to Maximize Buckling Load of Blade-Stiffened Panels with Strength Constraints using the Iterative Fractal Branch and Bound Method
Composite Part B, 39(5), (2008), pp 842-850.
- 82) Ryosuke Matsuzaki, Motoko Shibata, Akira Todoroki
Improving performance of GFRP/aluminum single lap joints using bolted/co-cured hybrid method
Composites Part A, 39(2) (2008), pp.154-163.
- 83) Ryosuke Matsuzaki, Akira Todoroki
Intelligent tires based on measurement of tire deformation
Journal of Solid Mechanics and Materials Engineering, JSME, 2(2), (2008), pp.269-280.
- 84) Ryosuke Matsuzaki, Motoko Shibata, Akira Todoroki
Reinforcing aluminum/GFRP co-cured single lap joint using inter-adherent fiber,
Composites Part A: applied science and manufacturing, 39(5), (2008), pp.786-795.
- 85) Masahito Ueda and Akira Todoroki
Delamination Monitoring of quasi-isotropic CFRP laminate using electric potential change method
Modern Physics Letters B, 22(11), (2008), pp.869-874.
- 86) A. Todoroki and K. Omagari
Detection of matrix crack density of CFRP using electrical potential change method with multiple probes
Journal of Solid Mechanics and Materials Engineering, JSME, 2(6), (2008), pp.718-729.
- 87) Akira Todoroki and Masato Sekishiro
Modified Efficient Global Optimization for a Hat-stiffened Composite Panel with Buckling Constraint
AIAA J., 46(9), (2008), pp.2257-2264.
- 88) Akira Todoroki & Masato Sekishiro
Optimization of Blade Stiffened Composite Panel under Buckling and Strength Constraints
Journal of Computational Science and Technology, JSME, 2(1), (2008), pp.234-245.
- 89) Ryosuke Matsuzaki, Timothy Keating, Akira Todoroki, Naoki Hiraoka,
Rubber-based strain sensor fabricated using photolithography for intelligent tires,

Sensors and Actuators A: Physical, 148(1), (2008), pp.1–9.

90) Masahito Ueda and Akira Todoroki

Finite Element Study on Delamination Identification in Quasi-isotropic CFRP Laminate by Residual Stress Release Using the Electric Potential Change Method
Journal of Solid Mechanics and Materials Engineering, 2(11), (2008), pp.1451-1461.

91) Akira Todoroki and Norihiko Hana

Optical Transparency Change Method for Cure Monitoring of GFRPs
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