



## **Professor Ala Tabiei**

See:  
<http://www.ase.uc.edu/~atabiei/>  
<http://www.ase.uc.edu/people/info/tabiei.html>  
[http://sas.ceas.uc.edu/facultyandStaff/profiles/Ala Tabiei.html](http://sas.ceas.uc.edu/facultyandStaff/profiles/Ala_Tabiei.html)  
<http://journalogy.net/Author/12823681/ala-tabiei>  
<http://www.barnesandnoble.com/c/dr.ala-tabiei>  
[http://books.google.com/books/about/Buckling analysis of moderately thick la.html?id=ThwVOAAACAAJ](http://books.google.com/books/about/Buckling_analysis_of_moderately_thick_la.html?id=ThwVOAAACAAJ)  
[http://www.swotti.com/card/people/ala-tabiei\\_2569506.htm](http://www.swotti.com/card/people/ala-tabiei_2569506.htm)  
[http://www.aipuniphy.org/Profile.bme/121992/Ala Tabiei](http://www.aipuniphy.org/Profile.bme/121992/Ala_Tabiei)

Associate Professor  
Aerospace Engineering & Engineering Mechanics

**Education:**

B.S., Mechanical Engineering, 1984

M.S., Aeronautical Engineering, Wichita State University, 1988

M.S., Mathematics, University Of Cincinnati, 1992

Ph.D., Aerospace Engineering, University Of Cincinnati, 1994

Website: <http://www.ase.uc.edu/~atabiei/>

**Areas of Interest:**

Impact dynamics

Nonlinear finite element methods

Application of numerical methods for structural mechanics

Finite element simulation of strength and deformation of composite materials

Crashworthiness and impact simulation using the Explicit FEM (LS-DYNA3D)

Implementation of material models in finite element codes (like ABAQUS and DYNA3D)

**Publications:**

Tabiei A, Ivanov I, "Materially & Geometrically Nonlinear Woven Composite Micro-mechanical Model with Failure for Finite Element Simulations," *IJ of Nonlinear Mechanics*, 39, pp 175-188, 2004.

Tabiei, A. and Wu J., "Three-dimensional Fracture Models Implementation for Explicit Finite Element Simulation With Automatic Crack Growth," *IJ of Numerical Methods in Engineering*, Vol 57, No. 13. 2003.

Tabiei A, Song G, Jiang Y, "Strength Simulation Of Woven Fabric Composite Materials With Material Nonlinearity Using Micromechanics Based Model," *J Thermoplastic Composites* 16: (1) 5-20 Jan 2003.

Ivanov I, Tabiei A, "Collapsible Shell Finite Element For Composite Materials," *Finite Elem Anal Des* 39: (4) 343-354 Feb 2003.

Ala Tabiei and Romil Tanov, "Sandwich Shell Finite Element For Dynamic Explicit Analysis," *IJ of Numerical Methods in Engineering*, 54: (5) 763-787 Jun 20 2002.

Tabiei A, Yi WT, "Comparative Study Of Predictive Methods For Woven Fabric Composite Elastic Properties," *Composite Structures* 58: (1) 149-164 Oct 2002.

Tabiei A, Ivanov I, "Computational Micro-Mechanical Model Of Flexible Woven Fabric For Finite Element Impact Simulation," *IJ Numer Meth Eng* 53: (6) 1259-1276 FEB 28 2002.

Ivanov I, Tabiei A, "Flexible Woven Fabric Micromechanical Material Model With Fiber Reorientation," *J Mech Adv Matl Struct* 9: (1) 37-51 Jan 1 2002.

Ivanov I, Tabiei A, "Three-Dimensional Computational Micro-Mechanical Model For Woven Fabric Composites", *Composite Structures* 54: (4) 489-496 Dec 2001.

Romil Tanov and Ala Tabiei, "Computationally Efficient Micromechanical Woven Fabric Composite Constitutive Models," *J Applied Mechanics*, Vol. 68, No. 4, pp. 553-560, Jul 2001.

Tabiei, A. and Chen, Q., "Micromechanics Composite Material Model for Crashworthiness Applications", *J Thermoplastics Composites*, 14: (4) pp. 264-289 Jul 2001.

Ala Tabiei and Jin Wu, "Three Dimensional Nonlinear Orthotropic Finite Element Material Model For Wood," *Composite Structures*, Vol. 50, No. 2, pp. 143-149, 2000.

Romil R. Tanov and Ala Tabiei, "Finite Element Implementation Of A New Sandwich Homogenization Procedure," *Composite Structures*, Vol. 50, No. 1, pp. 49-58, 2000.

Ala Tabiei and Romil Tanov, "A Nonlinear Higher Order Shear Deformation Shell Element For Dynamic Explicit Analysis: Part I. Formulation And Finite Element Equations," Finite Elements In Analysis & Design, Vol. 36, No. 1, pp. 17-37, 2000.

Ala Tabiei and Romil Tanov "A Nonlinear Higher Order Shear Deformation Shell Element For Dynamic Explicit Analysis: Part II. Verification Examples," Finite Elements In Analysis & Design, Vol. 36, No. 1, pp. 39-50, 2000.

A. Tabiei, Y. Jiang, W. Yi, "A Novel Micromechanics-Based Plain Weave Fabric Composite Constitutive Model With Material Nonlinear Behavior," AIAA Journal, Vol. 38, No. 5, May 2000.

Tabiei, A. and J. Wu, "Validated Crash Simulation of the Most Common Guardrail System in the USA," IJ of Crashworthiness, Vol. 5No. 2, pp. 153-168, 2000.

### **Professional Activities:**

Reviewer for several journals

Session developer and chairman, Symposium on Structural Similitude and Size Effect of Metallic and Composite Materials and Structures, ASME, Winter Annual Meeting, Nov., 1997, Dallas, TX.

Session chairman, Symposium on Textile Composites, 4th International Conference on Composite Engineering, Big Island, HI, 1997.

Session Co-Chair, Symposium on Crashworthiness and Occupant Protection in Transportation Systems, ASME, Winter Annual Meeting, Dallas, TX, 1997.

Session Co-Chair, Symposium on Sandwich Construction for Large Transport Aircraft, ASME, Winter Annual Meeting, Anaheim, CA, 1998.

Session Chair, Twenty-Third Annual Symposium on Aerospace Science & Technology, Dayton, OH, April 1998

### **Courses offered 2005-2006:**

20 AEEM 480 001 COMPUTATIONAL MECH, 05A

20 EGFD 707 001 ADV FINITE EL III, 05A

20 EGFD 705 001 F E TECH I, 06W

220 MECH 525 INTRO FIN ELEM I, 06W

20 AEEM 597 001 COMPOSITE STRUCT, 06S

20 MECH 526 INTRO FIN ELEM II, 06S

20 EGFD 706 001 F E TECH II, 06S