

Eric L. Vandygriff

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EDUCATION

M.S. – Aerospace Engineering *Texas A&M University*

May 2002
College Station, TX

GPR: 3.4

Relevant Coursework: Theory of Elasticity, Micromechanics, Material Science, Mechanical Behavior of Materials, Advanced Numerical Simulation, Scientific Instrument Making

B.S. – Aerospace Engineering *Texas A&M University*

May 2000
College Station, TX

GPR: 3.2 (major)

Relevant Coursework: Aerospace Vehicle Design, Airfoil and Wing Design, Aerospace Structural Design, Aerodynamics, Material Science, Orbital Mechanics

ACADEMIC EMPHASIS:

Special interests in aerospace materials and structures with emphasis on shape memory alloys and microstructures, supported with knowledge of aerodynamics, propulsion, and control and stability. Experience in various material and structural testing techniques including laser, ultrasonic, and mechanical testing on alloys, polymers, and composites. Graduate research focus on fabrication and characterization of porous NiTi shape memory alloy.

ACADEMIC HONORS, ACHIEVEMENTS AND ACTIVITIES:

January 2002 : Texas Board Certified Engineer-in-Training
Summer 2001 : 2nd Place at SES/MMC 2001 Conference national student presentation competition in San Diego, CA
Spring 2000 : Filed Disclosure of Invention with Texas A&M University for fabrication of porous NiTi shape memory alloy via a Hot Isostatic Press
Summer 1998 : TEES Fellowship granted by Undergraduate Summer Research Program
Fall 1998 - Present : Member of AIAA (American Institute of Aeronautics and Astronautics)
Fall 1996-Spring 1997 : Member of ASME (American Society of Mechanical Engineers)
Spring 1993 : FAA Certified Private Pilot

WORK EXPERIENCE

Materials Structures Laboratory **Laboratory Supervisor and Graduate Researcher** **Dept. Aerospace Engineering, Texas A&M University**

Spring 1999 – Present

- Prepare, design, and customize equipment and perform a wide range of experiments for various customers including Boeing, Medtronic, and Robin, Kaplan and Ciresi
- Written and submitted various technical reports, proposals, and presented work at various conferences
- Experience with laboratory equipment including: MTS Hydraulic Load Frames, High Vacuum Furnace, Widefield Metallograph and Image-Pro for image capture and enhancement, Differential Scanning Calorimeter, SEM, Hot Isostatic Press, and Nanoindenter with atomic force microscope capabilities.
- Day to day duties and responsibilities as supervisor and technician include the following:
 - equipment management, upkeep, repair, and purchasing
 - training and assisting other graduate students in material testing techniques and safety awareness
- Data acquisition hardware/software and analysis using National Instruments Labview
- Microstructure analysis with emphasis on NiTi SMA (shape memory alloys)

- Manufactured porous NiTi SMA from elemental powders via Hot Isostatic Press
- Equipment design and fabrication using Mechanical Desktop/AutoCAD
- Machining skills with various shop instruments including mill, lathe, welding kit

Wave Propagation Laboratory
Research Assistant
Dept. Aerospace Engineering, Texas A&M University

Summer 1998 – Spring 1999

- Manufactured various particular composites for non-destructive evaluation
- Tested structural behavior via ultrasonic wave propagation and Doppler Laser techniques

Durable Specialties Inc.
Construction Team Member

Summer 1997

- On-site construction including work with earth moving equipment, rebar, and concrete
- Worked in teams to safely erect multi-intersection traffic lights

Voluntary Representative

Feb 1993 – Feb 1995

- Worked in Spain for 24 months making contacts, providing instruction, guidance, and counseling to youth and adults
- Trainer and financial clerk representing and assisting less skilled volunteers

COMPUTER KNOWLEDGE

PROGRAMMING: Fortran 77/90, Matlab, N.I. Labview
 SOFTWARE: Adobe PhotoShop, Advanced Aircraft Analysis, AutoCAD, Abaqus, Aircraft CAD, FEMAP, Image-Pro, MAPLE, Mechanical Desktop, Latex, Microsoft Office, Satellite Tool Kit
 PLATFORMS: DOS, Windows 3.xx/9x/00/NT, UNIX

PUBLISHED WORKS

- 1) Lagoudas D.C.; Vandygriff E.V.; "Processing and Characterization of NiTi Porous SMA by Elevated Pressure Sintering," *Journal of Intelligent Material Systems and Structures*, Submitted Jan 2002.
- 2) Lagoudas D.C.; Entchev P.B.; Vandygriff, E.L. ; "Fabrication and Modeling of Porous Shape Memory Alloys," *American Society for Composites, Tech Conf (2001) 16*.
- 3) Lagoudas, D. C.; Entchev, P. B.; Vandygriff, E. L.; "Fabrication, modeling and characterization of porous shape memory alloys," *Proc. SPIE-Int Soc. Opt. Eng.*, (2001).
- 4) Vandygriff, E.V.; Lagoudas, D.C.; Thangaraj, K.T.; Chen, Y.C. "Porous Shape Memory Alloys, Part I: Fabrication and Characterization," *American Society for Composites, Tech Conf (2000) 15, 239-247*.
- 5) Lagoudas, D.C.; Entchev, P.B.; Vandygriff, E.L.; Qidwai, M.A.; DeGiorgi, V.G. "Modeling of thermomechanical response of porous shape memory alloys," *Proc. SPIE-Int. Soc. Opt. Eng.* (2000), 496-508.
- 6) V.K. Kinra; B.K. Henderson; E. Vandygriff; "Elastodynamic Response of a Periodic Layer of Spherical Particles Containing Vacancies", *Res Nondesctruive Eval.*, 12 (3): 133-143, (2000).

REFERENCES

Dr. Dimitris C. Lagoudas, Graduate Advisor
 Dept. Aerospace Engineering, Texas A&M University
 (979) 845-1604

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 Dept. of Engineering, Purdue University
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