

OLIVIER W. BERTACCHINI

707, B, VASSAR COURT, COLLEGE STATION TX 77840, (979)-574-3356
bertacchini@neo.tamu.edu, <http://smart.tamu.edu/people/graduate/olivierbertacchini.htm>

EDUCATION

- **Texas A&M University, College Station, Texas, USA**
PhD – Aerospace Engineering, expected graduation August 2009
Thesis project (in collaboration with the Boeing Company): *Characterization and Modeling of Transformation Induced Fatigue of Shape Memory Alloy Actuators.*
- **Ecole Nationale Supérieure d'Arts et Metiers (ENSAM), Metz, France**
Engineering Diploma/Master's Degree: graduated in July 2002
Mechanical and Industrial Engineering degree specialized in Material Science and Engineering

WORK EXPERIENCE

- **Graduate Research Assistant, Texas A&M University**
September 2003 – Present
 - Design/modification of a custom-built fatigue test frame for Shape Memory Alloy actuators.
 - Fatigue testing of Shape Memory Alloy actuators
 - Writing of proposals and reports.
 - Analysis of fatigue behavior, damage and fracture of materials using:
 - Differential Scanning Calorimeter
 - MTS hydraulic load frames
 - Metallographic analyses (optical and electronic microscopy, X-ray diffraction,...)
- **Research Assistant, Texas A&M University, Aerospace Engineering Department**
July 2001 – September 2001 (First part of Eng. Diploma thesis)
 - Studied literature on Shape memory Alloys.
 - Tested the fatigue response of Shape Memory Alloy actuators.
 - Analyzed fatigue data from failure of the SMA actuators.
- **Assistant Personnel Manager / Technical Salesman, Roquebrune-sur-Argens, France**
July 2000 – September 2000
 - Workplace: KIBATI, Woodwork and kitchen fit out company.
 - Prospected, negotiated and set up computerized system for the kitchen department: conception and management of commands and sales.
 - Reviewed accounting books of the company.
 - Revised the management of client files, commands and sales.
- **Assistant Research Engineer, Imphy, France**
July 1999 – August 1999
 - Workplace: research laboratory at IMPHY-UGINE-Précision (branch of ARCELOR, formerly USINOR).
 - Investigated fundamentals dealing with nitrogen effect in stainless steels.
 - Worked on the effect of electro slag remelting on mechanical characteristics of a high nitrogen content super austenitic stainless steel.
 - Set off a research program for a high nitrogen super austenitic stainless steel
 - Analysed and report first results of microstructural improvement

OLIVIER W. BERTACCHINI

707, B, VASSAR COURT, COLLEGE STATION TX 77840, (979)-574-3356
obertacchini@neo.tamu.edu, <http://smart.tamu.edu/people/graduate/olivierbertacchini.htm>

RELEVANT COURSEWORK

Continuum Mechanics, Active Materials, Material Science, Material-Process Interactions,
Micromechanics, Multifunctional Materials, Fatigue of Metals, Fracture Mechanics, Plasticity.

RESEARCH INTERESTS

- Shape Memory Alloys
- Fatigue behavior and fracture
- Oxidation and corrosion of SMAs
- SMA testing and characterization
- Process – Microstructure – Fatigue Behavior relationship and interactions.

PUBLISHED WORK

- Journal papers:
 - Bertacchini O W, Lagoudas D C and Patoor E. *Thermomechanical transformation fatigue of TiNiCu SMA actuators under a corrosive environment – Part I: experimental results*. International Journal of Fatigue, 2008, accepted for publication.
 - Lagoudas D C, Bertacchini O W and Patoor E. *Thermomechanical transformation fatigue of TiNiCu SMA actuators under a corrosive environment – Part II: characterization and modeling*. International Journal of Fatigue, 2009, to be submitted.
- Conference papers:
 - Bertacchini O W, Lagoudas D C, Calkins F T, Mabe J H. *Transformation induced cyclic behavior and fatigue properties of Ni-rich NiTi SMA actuators*. Proceedings of the ICOMAT'08, Santa Fe, New Mexico, July 2008.
 - Bertacchini O W, Lagoudas D C, Calkins F T, Mabe J H. *Thermomechanical cyclic loading and fatigue life characterization of nickel rich NiTi shape-memory alloy actuators*. Proceedings of SPIE (San Diego, CA, April 2008), Behavior and Mechanics of Multifunctional and Composite Materials, vol. 6929, Marcelo J. Dapino and Zoubeida Ounaies, Editors. 2008, pp. 1601-1611.
 - Bertacchini O W, Lagoudas D C and Patoor E. *Surface crack development in transformation induced fatigue of SMA actuators*. Proceedings of the 16th European Conference on Fracture (Alexandropoulos, Greece, July 2006) (Fracture of nano and engineering structures, vol C), Springer Netherlands, editor. 2006, pp. 1309-10.
 - Bertacchini O, Lagoudas D and Patoor E. *Fatigue life characterization of shape memory alloys undergoing thermomechanical cyclic loading*. Proceedings of SPIE (San Diego, CA, August 2003), Smart Structures and Materials: Active Materials: Behavior and Mechanics, vol. 5053, Lagoudas D C, editor. 2003, pp. 612-24.

ATTENDED CONFERENCES

- McMat conference: *Thermomechanical fatigue of SMAs*. Baton Rouge, LA, June 2005.
- SES conference: *Fatigue Life Characterization and Modeling of SMA Actuators In a Corrosive Environment*. College Station, TX, October 2007.
- SPIE conference: *Thermomechanical cyclic loading and fatigue life characterization of nickel rich NiTi shape-memory alloy actuators*. San Diego, CA, March 2008.
- ICOMAT conference: *Transformation induced cyclic behavior and fatigue properties of Ni-rich NiTi SMA actuators*. Santa Fe, NM, July 2008.
- SES conference: *Transformation Induced Cyclic Behavior and Fatigue Life of Nickel-Rich NiTi SMA Actuators*. Urbana-Champaign, IL, October 2008.

OLIVIER W. BERTACCHINI

707, B, VASSAR COURT, COLLEGE STATION TX 77840, (979)-574-3356
obertacchini@neo.tamu.edu, <http://smart.tamu.edu/people/graduate/olivierbertacchini.htm>

TEACHING EXPERIENCE

- Lectured during two semesters to a senior class on *Fatigue of Metals*, subset chapter of AERO 404: “Mechanics of Advanced Aerospace Structures”.

SKILLS AND AWARDS

- Software: Solid Works, Labview, Maple, introductory level to Abaqus.
- Processing: welding, machining (manual and robotized), and forming.
- Awards: 2nd place in an innovative business contest using Shape Memory Alloys (Metz, France, 2002).
- Other Interests: Classic cars, Formula one racing, mountain (hiking and skiing), rollerblading, tennis, scuba diving, deep-sea fishing, traditional music, traveling, cultural exchange, hosting and cooking for dinner parties.