Dwayne McDaniel

1. Name and academic rank
Dwayne McDaniel, Associate Professor and Co- Graduate Program Director, Department of Mechanical and Materials Engineering

2. Education – degree, discipline, institution, year
Ph.D. Engineering Mechanics, University of Florida, Gainesville, FL, 2000
M.S. Engineering Mechanics, University of Florida, Gainesville, FL, 1993
B.S. Aerospace Engineering, University of Florida, Gainesville, FL, 1991

3. Academic experience – institution, rank, title
20 Years
Associate Professor, Mech. & Mater. Eng. Dept., FIU, 2019-present
Co-Graduate Program Director, Mech. & Mater. Eng. Dept., FIU, 2020-present
Principal Scientist, Applied Research Center, FIU, 2014-2019
Senior Research Scientist, Applied Research Center, FIU, 2009-2014
Research Scientist, Applied Research Center, FIU, 2006-2009
Adjunct Professor, Mech. & Mater. Eng. Dept., FIU, 2012-2019
Adjunct Professor, Mech. & Aero. Eng. Dept., University of Miami, 2005-2006
Associate Adjunct Professor, Aero., Eng. Mech. & Eng. Sci. Dept., University of Florida, 2000-2001

4. Non-Academic experience
Engineer: Exponent, 2001-2006

5. Certifications or professional registrations
Professional Engineer, State of Florida #62404

6. Current membership in professional organizations
American society of Mechanical Engineers (ASME)

7. Honors and awards
ASME Best Poster/Paper Award at the WM2020 Conference, for Paper # 20301 "Aging of Concrete for the Evaluation of Repair Materials to Protect the Walls of the HCAEX Tunnel at Savannah River", 2020

8. Service activities (within and outside of the institution)
ASME Crawler/Ground Robotics for Inspection Committee
FIU Faculty Search Committees
FIU MME Graduate Program Committee
McNair Summer Mentor
Journal Paper Reviewer, ASME Heat Transfer, Robotics, Advancements in Concrete Construction, Materials Evaluation, Machines, Composite Structures, Applied Sciences
Conference Paper Reviewer, ICRA 2020
Book Reviewer Nise - Control Systems

9. Briefly list the most important publications and presentations from the past five years

S. Reddy, B. Freno, P. Cizmas, S. Gokaltun, D. McDaniel, G. Dulikravich, "Constrained Reduced-Order Models Based on Proper Orthogonal Decomposition", ***Computer Methods in Applied Mechanics and Engineering***, Vol. 321, 1 July 2017, 18-34.
V. Senyurek, A. Baghalian, S. Tashakori, D. McDaniel, I. Tansel, "Localization of Multiple Defects Using Compact Phased Array Method", ***Journal of Sound and Vibration***, Vol. 413, January 2018, 383-394.
S. Tashakori, A. Baghalian, V. Senuyrek, M. Unal, D. McDaniel, I. Tansel, "Implementation of Heterodyning Effect for Monitoring the Health of Adhesively Bonded and Fastened Composite Joints", ***Applied Ocean Research***, Vol.72, March 2018, 51-59.
A. Baghalian, V. Senuyrek, S. Tashakori, D. McDaniel, I. Tansel, "A Novel Nonlinear Acoustic Health Monitoring Approach for Detecting Loose Bolts", ***Journal of Nondestructive Evaluation***, 2018 37:24.
A. Baharanchi, S. Gokaltun, D. McDaniel "A Dissipation-Based Method for Improving the Accuracy of Computational Fluid Dynamics Simulations of High Level Non-Newtonian Wastes", ***Nuclear Engineering and Design***, Vol. 332, June 2018, pgs. 307-318.
A. Baghalian, S. Tashakori, V. Senuyrek, M. Unal, D. McDaniel, I. Tansel, "Development of Comprehensive Heterodyne Effect Based Inspection (CHEBI) Method for Inclusive Monitoring of Cracks", ***Measurement***, Volume 128, November 2018, Pages 89-95.
S. Tashakori, A. Baghalian, V. Senuyrek, S. Farhangdoust, D. McDaniel, I. Tansel, "Composites bond inspection using heterodyne effect and SuRE methods", ***Shock and Vibration***, Vol. 2018, Article ID 1361932.
S. Farhangdoust, S. Tahakori, D. McDaniel, I. Tansel, A. Baghalian, A. Mehrabi, Damage Detection of 3D Printed Mold Using the Surface Response to Excitation Method", ***Structural Engineering and Mechanics***, Vol. 75, Num 3, August 10, 2020, pgs 369-376.
P. Wang, D. Toledo, E. Zhang, M. Telusma, D. McDaniel, P.Liang, S. Khizroev, "Scanning Probe Microscopy Study of Cobalt Ferrite - Barium Titanate Coreshell Magnetoelectric Nanoparticles", ***Journal of Magnetism and Magnetic Materials***, Vol. 516 No. 15 (2020) pp. 1-9.
P. Wang, E. Zhang, D. Toledo, I. Smith, B. Navarrete, N. Furman, A. Hernandez, M. Telusma, D. McDaniel, P. Liang, S. Khizroev, "Colossal Magnetoelectric Effect in Coreshell Magnetoelectric Nanoparticles", ***Nano Letters***, Vol. 20 No. 8 (2020) pp. 5765–5772.
A. Awwad, D. McDaniel, L. Lagos, B. Tansel, "Aging characteristics of ethylene propylene diene monomer (EPDM) nonmetallic components used in caustic liquid waste transfer lines: effect of temperature and exposure time", ***Engineering Failure Analysis***, (Accepted 7/21).
C. Lara, J. Villamil, A. Abrahao, A. Aravelli, G. Daldegan, S. Sarker, D. Martinez, D. McDaniel, "Development of an Innovative Inspection Tool for Superheater Tubes in Fossil Energy Power Plants", ***Materials Evaluation***, Volume 79, Issue 7 (2021), pp. 728-738.

10. Briefly list the most recent professional development activities

- Robotics for Inspection and Maintenance workshop 9/24-25 2019 in College Station, Texas
- Robotics for Inspection and Maintenance workshop 5/25-26 2021 virtually
- PE renewal courses every 2 years