MAGDY S. ATTIA, Ph.D.
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EDUCATION

Ph.D. Mechanical Engineering, Texas A&M University, 1995
M.S. Mechanical Engineering, Texas A&M University, 1991
B.S. Aerospace Engineering, Texas A&M University, 1988

WORK EXPERIENCE

Associate Chair, Aug 2016 – present
Department of Aerospace Engineering
Embry Riddle Aeronautical University,
Daytona Beach, Florida

- Responsible for the graduate program.
  - Overseeing a program of 140 MS students and 22 PhD students

Professor, Aug 2011 – present
Department of Aerospace Engineering
Embry Riddle Aeronautical University,
Daytona Beach, Florida

- Engaged in research and education in the field of gas turbine engines.
  - Taught graduate and senior level courses in the field of Lean Engineering, Aerodynamics and Thermodynamics of Gas Turbine Engines, and Detailed Design and Operation of Gas Turbine Engine Components, as well as special topics in axial compressor and turbine aero and thermodynamics.
  - Supervisor of the Gas Turbine Laboratory ($2.8+M research expenditures since inception) including a CF6-6 High Bypass Turbofan Engine, Garrett TPF351-20 TS, and GE CF34 TF, with several research associates and graduate research assistants, as well as a comprehensive suite of NASA, USAF, in-house, and commercial design and analysis codes.
  - Research areas focus on design, and Lean Engineering as well as all aspects of the gas turbine engine including component aerodynamics and Thermodynamics, certification, operation, current issues, as well as design systems.
  - Associate Director of the Honors Program for Aerospace Engineering (2004-2015)

Chief Technical Officer, Nov 2009 – June 2011
Turbine truck Engines, Inc., Deland, Florida
- Dedicated to the development of an innovative, flex-fuel, pulse detonation engine for drive-shaft applications including: mobile power generation, general aviation, and heavy-duty trucks

Chief Operating Officer, Jan 2009 – Nov 2009
Turbine truck Engines, Inc., Deland, Florida
- Dedicated to the development of an innovative, flex-fuel, pulse detonation engine for drive-shaft applications including: mobile power generation, general aviation, and heavy-duty trucks

WORK EXPERIENCE (Continued)

President and Founder, 2003 – present
ABM Engineering, LLC, Daytona Beach, Florida

- Expert Witness – various cases regarding propulsion and gas turbine engines technologies
  - Patent Invalidation (IPR) study – US patent # 8,246,292 "*Low Noise Turbine for Geared Turbofan Engine*". Authored expert declaration under 37 CFR § 1.68. Filed on April 8, 2016.
  - Patent Invalidation (IPR) study – US patent # 7,966,807 "*Vapor Cooled Static Turbine Hardware*". Authored expert declaration under 37 CFR § 1.68. Filed on January 29, 2016.
  - Patent Invalidation (IPR) study – US patent # 8,365,513 "*Turbofan Engine Operation Control*". Authored expert declaration under 37 CFR § 1.68. Filed on January 29, 2016.
  - Yellen et al. vs Teledyne Continental Motors, Inc. – represented the defendant in this aircraft crash litigation. Authored expert report. Plaintiff expert reports were redacted and the case settled prior to trial assignment. **http://fjdefile.phila.gov/efsfjd/zk_fjd_public_qry_03.zp_dktrpt_frames?case_id=110500285&uid=!8xWFkmMBIolqsSYDxam&o=EaBa_UccX!rzHdb**, case ID 110500285

- Axial Compressor Redesign Conducted complete reverse engineering of an industrial compressor including cold-to-hot conversion, aero analysis, throughflow redesign, and 2D and 3D design and CFD.

- Advanced Missile Propulsion Design and Analysis Conducted Design, analysis, coding, and feasibility studies for advanced missile propulsion devices for the US Army Missile Defense (AMRDEC). This was part of SBIR phase I and II work.

- Structural Health Monitoring via Acoustic Emissions Won US Navy STTR phase I contract to predict crack initiation and growth in helicopter gearboxes. This work was done in collaboration with ERAU.

- Intellectual Property Investigation Assisted the customer by investigating the extent of the IP purchased from Socata (a division of EADS). Visited Socata's facilities in Tarbes, France and assessed the completeness of the IP while working with Socata representatives.

- Redesign of a Pulsed Detonation Engine Redesigned major portions of a pulse detonation engine to improve power output, performance, and reliability. Redesign focus included cycle analysis, combustion chamber, turbine design, tolerances, and materials. Using our in-house CATIA and a suite of industry standard codes. Conducted CFD and testing.

- LEAN Enterprise Lecturer and Trainer. Certified Instructor in "LEAN Enterprise Value" principles by the "LEAN Aerospace Consortium"; a consortium of all major Aerospace companies and MIT (Massachusetts Institute of Technology). Trained employees at the Rolls-Royce Corporation, Indianapolis, Indiana, in Lean Enterprise Values.

- Consulting in the field of Alternative Power. Consulted with Turbine Truck Engines, Inc., Deland, Florida, in the continued development of a pulsed detonation gas turbine engine (US patent # 6,000,214) for automotive, power, aviation, and general drive shaft applications.

WORK EXPERIENCE (Continued)

- Consulting in the field of Innovative Technologies. Consulted with foreign and domestic inventors to bring innovative technologies to the propulsion and Turbomachinery industry. Innovative technologies include counter-rotation drives, missile propulsion, and coal combustion for power generation.

Contributing Author, July 2007 – present
Engine Air Magazine, dedicated to the jet engine users and operators market, NY
Authorship of a technical quarterly article titled "Ask the Engineer"

Chair of the Technical Advisory Board, Jan 2007 – June 2011
Turbine truck Engines, Inc., Deland, Florida
Dedicated to the development of an innovative, flex-fuel, pulse detonation engine for drive-shaft applications including: mobile power generation, general aviation, and heavy-duty trucks

Associate / Assistant Professor, Jan 2004 – May 2011
Department of Aerospace Engineering
Embry Riddle Aeronautical University, Daytona Beach, Florida

Consultant, May 2004 – October 2004
CDI Corporation, Orlando, Florida

- Consulting in the field of Gas Turbine Engines. Consulted with the Siemens Westinghouse Power Corporation, through CDI Corp., Orlando, Florida, in the areas of compressor diaphragms mechanical integrity (unusual wear patterns), and compressor performance at part load operation (excessive bleeding to lower CO emissions).

Senior Design Engineer, Mar 1998 – Nov 2003
Siemens Power Generation, Orlando, Florida

- ATS Compressor "depressed-inlet-pressure" Test Data Analysis. The ATS compressor was tested (DOE funded project) at the Philadelphia Naval Shipyard at a depressed inlet pressure. Conducted a performance prediction calculation of the ATS compressor at that inlet pressure using the "Viscous Method (mentioned below)". The prediction was within the measurement accuracy.

- W501FD Empire Test Data Analysis. Analyzed the Empire test data of the W501FD compressor, and compared with prediction.

- Lead Aerodynamic consultant for the upgrade of the W501D5 compressor. Duties involved consulting and cooperating with the Modifications and Upgrades group to design a cost-effective upgrade for the W501D5 by redesigning only the front stages and maintaining retrofittability. Furthermore, the customer ability to use "wet compression" was not to be hindered.

- Conceptual development of the next generation family of compressors. This set of studies involved researching a new airfoil shape, investigation of a design of a low stage count highly loaded compressor, investigation of modularly upgradeable compressor designs, as well as investigating cantilever diaphragm designs.

WORK EXPERIENCE (Continued)

- Compressor Design Methods. From within the design systems group, given the global responsibility of ensuring that the in-house developed compressor design codes are performing properly. Duties included algorithms development, validation, creating of test cases, user manuals, compiling training materials, and performing global training (at US and German sites).

Senior Design Engineer, Nov 1995 – Mar 1998
Westinghouse Electric Corporation, Orlando, Florida

- Aerodynamic Blading Designer for the W501G and ATS Compressors. Duties included section design for optimal design point performance as well as off-design performance, stacking, and 3D CFD.

- Aerodynamic Blading Designer for the ATS Turbine. Designed the 4^{th} stage blade and vane. Duties included section design for optimal design point performance as well as off-design performance, stacking, and 3D CFD.

- Co-developed a multi-discipline method for fast tuning of compressor (and turbine) airfoils using Strain Energy and Kinetic Energy contours. The combination of SE and KE contours plots lead to a better understanding of the modal behavior of the airfoil for each mode, independently, providing for the ability to manipulate the airfoil to affect a particular mode without impacting neighboring modes. As a result, tuning complex shrouded airfoils became much more efficient.

- Meanline and S1-S2 compressor analysis calculations. Duties included the modeling and understanding of all of the Westinghouse compressors (AA, B series, D4, D5, D5A, FA, FC, G, and ATS). Each compressor was analyzed using a combination of 2D Blade-to-Blade code and a streamline curvature code. The impact of each aerodynamic feature was studied using "sensitivity studies". Features studied included: Hade angles, airfoil count, re-stagger, radial distribution of total pressure, IGV design, OGV design and its impact on diffuser performance, diffuser shapes, bleeds, and ID and OD contour shapes.

- Developed the "Viscous Analysis Method": a method to predict the performance of axial compressors. This method involves the combination of 3D CFD with a throughflow code. The method was validated against W501FC and W501D5 shop test data, as well as ATS "depressed-inlet-pressure" shop test data. In each case, the performance prediction was within the measurement uncertainty (see publications).

- Developed the "Viscous Design Method": a method to design axial compressors. This method involves the combination of 3D CFD with a throughflow code to systematically design 3D airfoils, and is an extension of the previously mentioned work.

- Lead aerodynamicist for the upgrade of the W501F compressor, later known as the W501FD. My task was to maintain retrofittability but still increase mass flow and efficiency. Employing the "Viscous Design Method", 3D airfoil shapes were used to achieve the target.

WORK EXPERIENCE (Continued)

Research Associate, Jan 1989 – May 1995
Turbomachinery Laboratory, Texas A&M University, College Station, Texas

- Development of axial compressor and turbine models: this was a research project funded by NASA-Lewis (now NASA-Glenn) (contract NAG-1144) to create a complete engine performance code. GETRAN is a modular code for the simulation of design and off-design performance of Gas Turbine Engines (see publications). Duties were primarily the writing of the Compressor and Turbine modules, which were also spun-off as individual stand-alone simulation codes. In addition, given responsibility for overall integration of the other modules, calibration and validation of the overall code. Conducted cycle studies, shutdown and start-up studies, loss-of-load studies, trip studies, as well as numerical integration, compiling, literature surveys, and code debugging.

PATENTS

Patent No. **9,353,754**, May 31, 2016
Title: Multi-Stage Axial Compressor with Counter-Rotation Using Accessory Drive

Patent No. **6,079,197**, June 27, 2000
Title: High Temperature Compression and Reheat Gas Turbine Cycle and Related Method.

Application No. 13/768,252, February 15, 2013
Title: Multi-Stage Axial Compressor with Counter-Rotation

AWARDS

- Recipient of the 1997 George Westinghouse Signature Award of Excellence
    - The highest award for technical merit, received for the aerodynamic leadership of the upgrade of the W501FD compressor and the development of the viscous method (see publications).

- AIAA Engine Design Competition – supervised teams of undergraduate students participating in this international competition held by the AIAA in collaboration with the ASME to conduct a comprehensive engine design in response to various RFP's.
    - First Place, 2012-2013
    - Second Place, 2010-2011, and 2014-2015

RESEARCH GRANTS

- *"Auxiliary Flow Tool"* development of a modular, physics-based duct analysis tool, 2011-2012:
    - Created a modular concept for aerodynamic ducts design: sizing and analysis
    - Coding in MATLAB with graphical user interface (GUI)
    - Tool in operation at customer site

- *"Large Engine Transportability"* investigate current capability and create innovative solutions for future [larger] fan tip diameter engines, 2011:
    - Development of a tool for ease of shipping including barcode tracking capability
    - Development of several innovative ideas for shipping large engines
    - Tool in operation at customer site

RESEARCH GRANTS & AWARDS (Continued)

- *"Investigation of Ice Buildup in APU Compartments"* develop a tool for estimating ice buildup and ice melting during various phases of flight and APU operations, 2010:
    - Algorithm development from literature search as well as in-house development
    - Coding in MATLAB with a graphical user interface (GUI)
    - Tool in operation at customer site

- *Conceptual Design for an Innovative Thrust Reverser System"* brainstorming for a totally new method of reversing the thrust of large commercial aircraft, 2008-2009:
    - Conceptualized 37 new innovative ideas, including on- and off-aircraft ideas
    - Utilized the IPT approach to narrow down to 10 ideas
    - Conducted preliminary design of those 10 ideas including a preliminary assessment of weight, cost, certification issues, and systems integration issues

- "*Feasibility Study of a "re-Engine" of a MS760X Paris Jet*", conducted engine selection and preliminary design to replace an aging turbojet with a modern turbofan and gain FAA approval as well as build the certification plan for the STC, 2006-2008:
    - Conducted a feasibility study for this 4-seater VLJ to assess its current performance
    - Reverse-engineered the entire aircraft in CATIA
    - Utilized the IPT approach to determine the best possible configuration and a new engine location
    - Worked with Williams, P&WC, and GE-Honda to assess their respective engines (for this application) and selected the FJ33 as the best available
    - Conducted conceptual design of the new configuration with special attention to certification issues, structural, fire suppression, "rotor burst", CG location, fuel lines, FADEC, etc…
    - Developed the preliminary certification plan for the STC, engaged necessary DER's and handed off to customer

- "*Modeling and Redesign of a Pulsed Detonation Engine for Drive Shaft Applications*", and "*Feasibility Study of a 540-HP Pulsed Detonation Engine for Drive Shaft Applications*", conduct a preliminary analysis regarding the assembly, rig test, and field (road) test of a pulsed detonation engine for drive shaft applications, 2006-present:
    - Conceptual visualization in CATIA
    - Cycle analysis and assessment of pulsed detonation
    - Conducted preliminary material assessment and selected new material
    - Issued drawings and constructed new parts as needed using CATIA, and a variety of tools including 5-axis CNC machine and CNC lathes.
    - Instrumented and tested the engine in the ERAU Gas Turbine Lab

- National Science Foundation "*A Large Beowulf Computer Cluster for Across-Discipline Research and Education at Embry-Riddle Aeronautical University*", with M. Hickey, and C. Herbster. Purchased and installed a 265-processor, 2.2 GHz, 64-bit application capable supercomputer, 2004, the cluster became operational in July of 2006:
    - Authored the grant proposal
    - Worked with a group of 3-4 vendors competing for the project and selected DELL
    - Worked with the University facilities office to design and plan the room which was to house the cluster
    - Served on the overseeing committee from 2005-2009

RESEARCH GRANTS & AWARDS (Continued)

- Larsen MotorSoprts (student project): assessment, analysis and redesign of a jet powered dragster. Supervised a group of 12 students to:
    - Conduct Aerodynamic modifications: redesigned the canards, introduced NACA ducts, redesigned the front tires, introduced an inverted tear drop for better aerodynamics, relocated the fuel tanks and parachute canisters, redesigned the front windshield
    - Conduct Propulsion system modifications: redesigned the inlet, redesigned the afterburner nozzle so that it is properly chocked (Mach Diamonds visible during test runs)
    - Conduct structural analysis and identified redundant members for weight reduction
    - Improved performance from 265 mph to 336 mph at the ¼ mile mark.

GRADUATE THESES SUPERVISION

- Nicole Gagnon (The Effect of Axial Spacing of Constant and Variable Blockages on the Deflagration to Detonation Transition in a Pulse Detonation Engine), Spring 2016 – currently with Pratt & Whitney, East Hartford, CT.

- Daniel Port (A Hybrid Vortex Solution for Surge Margin Enhancement in Axial Compressors), Spring 2016 – currently with Pratt & Whitney, East Hartford, CT.

- Travis Matsumoto (Determination of a Simplified High-Order Vortex Radial Equilibrium Equation with CFD Verification), Spring 2015 – currently with AbM Engineering, LLC, Daytona Beach, FL.

- Christopher Tate (Investigation of Pulse Detonation Engines; the Effects of Variable Blockage Ratios on the Deflagration to Detonation Transition), Spring 2015 – currently with Space-X, CA.

- Andrew Yatsko (Reduction of Secondary Flow Losses in a Turbine for Use in Man-Portable Power Generation), Fall 2014 – Currently with Teledyne Turbine Engines, Toledo, OH.

- Luis Ferrer-Vidal (Investigation of Pulse Detonation Engine Flow Conditions for Turbomachinery Integration), Fall 2014 – Currently pursuing PhD with Cranfield University, UK.

- Madhur Tiwari (Axial Compressor Design with Counter-Rotation and Variable RPM for Stall Mitigation), Summer 2014 – Currently with AbM Engineering, LLC, Daytona Beach, FL.

- Vladislav Shulman (Performance Improvement Through Velocity Triangle Optimization-Driven Redesign for Mitigating the Horseshoe Vortex in Axial Turbines), Spring 2014 – Currently with Management Consulting Group, LLC, Ann Arbor, MI.

- Abdulhalim Twahir (Preliminary Design of Blade and Disc Fixing for Aerospace Application Using Multi-Disciplinary Approach), Fall 2013 – Currently with Pratt & Whitney Canada.

- Jeffrey Vizcaino (Investigation of Pulsed Detonation Engines: Theory, Design, and Analysis), Spring 2013 – Currently with NASA Johnson, TX.

- Sanjivan Manoharan (Innovative Double Bypass Engine for Increased Performance), Fall 2011 – currently pursuing PhD at the University of Cincinnati, OH.

- Francisco Romo (Design and Optimization of a Deflagration to Detonation Transition DDT Section), Fall 2010 – currently with Hamilton Sundstrand, IL.

GRADUATE THESES SUPERVISION (Continued)

- Christopher Cassano (3D Verification of a 3-Stage Counter-rotating Compressor with Splitters in the Absence of BL Control), April 2009 – currently Sandia National Labs, NM.

- Christopher Hemerly (Conceptual Design and Quasi-Three Dimensional Verification of the Modular Compressor Approach), December 2008 – currently with Rolls Royce, IN.

- Romain LaRose (CFD Verification and Analysis of Nacelle-Wing-Body Flow Interaction for a Very Light Jet), December 2008 – currently with EADS, France

- Naiara Petralanda (1D and 2D Design and Verification of a 3-stage Counter-Rotating Compressor), November 2008 – currently Adjunct Professor at ERAU, FL.

- Chang Meang (Flow Control over the Suction surface of Compressor Stators), December 2007 – Currently with Doosan Heavy Industries, South Korea.

- Laurent Lachmann (Investigation of the Heat Transfer Benefits resulting from Eliminating the Horse Shoe Vortex on Turbine Stator Vanes), December 2007 – currently with ALTRAN Consulting, France

- K. Joe Klatsi, (Elimination of the Horse Shoe Vortex in Turbine Cascades), October 2006 – currently with GE, Cincinnati, OH.

- Troy Ramnath, (Highly Loaded Fan Stage Design for Military Application), May 2006 – currently with Standard Aero, British Columbia, Canada

- Hanho Hwang, (Multi-Stage Highly Loaded Axial Turbine Design), August 2005 – pursued PhD at Texas A&M University

- Amit Garg, (Highly Loaded Axial Turbine Stage Design), April 2005 – currently with Boeing, Washington

PUBLICATIONS

Attia, M., Port, D., and Rozendaal, A., "A Hybrid Vortex Solution for Surge Margin Enhancement in Axial Compressors", AIAA-2016-4644, presented at the 2016 AIAA Propulsion and Energy Forum, July 25-28, Salt Lake City, UT

Gagnon, N., and Attia, M., "The Effect of Axial Spacing of Constant and Variable Blockages on the Deflagration to Detonation Transition in a Pulse Detonation Engine", AIAA-2016-4648, presented at the 2016 AIAA Propulsion and Energy Forum, July 25-28, Salt Lake City, UT

Twahir, A., Roy, F., Attia, M., and Moustapha, H., "Single Tool for the Preliminary Design and Analysis of Aeroengines Turbine Fixings", IMECE 2014-39039, presented at the ASME 2014 International Mechanical Engineering Congress and Expo, November 14-20, Montreal, Quebec, Canada

PUBLICATIONS (Continued)

Attia, M., Stevens, D., Vizcaino, J., and Tate, C., "2D and 3D Performance Prediction of a Convergent Nozzle at Pressure Ratios from 1.4 to 7 and Comparison with Wind Tunnel Data", ***invited paper***, AIAA-2013-3732, presented at the AIAA/ASME/SAE/ASEE Joint Propulsion Conference, July 13-18, San Jose, California

Attia, M., Manoharan, S., Shulman, V., Stevens, D., and Lachmann, L., "Elimination of the Horse Shoe Vortex in Axial Turbine Vane Cascades via Airfoil Shape Optimization", AIAA-2013-3952, presented at the AIAA/ASME/SAE/ASEE Joint Propulsion Conference, July 13-18, San Jose, California

Barsoum, F., Shulman, V., Attia, M., Stevens, D., Shishino, J., and Baum, R., *Early Damage State Detection in Gearbox Components Via Acoustic Emission*, STTR Phase I Final Report, US Naval Air Warfare Center, Lakehurst, NJ, March 2013, Contract N68335-12-C-0358

Grossi, F., Attia, M., Hodson, M., *Statically Operated Ramjet: Tactical Missile Feasibility*, SBIR Phase I Final Report, US Army Space & Missile Defense Command, Huntsville, AL, August 2012, Contract W9113M-12-C-0015

Romo, F. X., Vizcaino, J., and Attia, M., "Theoretical Investigation and Preliminary Testing of a Flex-Fuel Pulse Detonation Engine for Drive Shaft Applications", presented at the 2011 Southeastern Regional AIAA Conference, April 4-5, 2011, Tuscaloosa, Alabama (2^{nd} place winner – best paper)

Romo, F. X., and Attia, M., "A Flex-Fuel Pulse Detonation Engine for Drive Shaft Applications", presented at the Florida Center for Advanced Aero Propulsion Annual Symposium and Exhibition, August 9-10, 2010, Tallahassee, Florida

Attia, M., and Hemerly, C., "Quasi Three Dimensional Verification of the Modular Compressor Design Approach", ASME GT2009-60132, presented at the ASME IGTI Turbo Expo, June 8-12, 2009, Orlando, Florida

Attia, M., Farrington, P., Weigel, A., and Candido, J., *Panel Session*: Lean in Engineering Education. 38th ASEE/IEEE Frontiers in Education conference, October 2008, Saratoga Springs, New York.

Attia, M., Cassano, C., and Schmidt, R., "Application of the Integrated Product Team (IPT) Concept to the Re-Engine of a Very Light Jet (VLJ)", presented at the AIAA 26th International Congress of the Aeronautical Sciences, Sept 14-19, 2008, Anchorage, Alaska.

Attia, M., "A Graduate Course in Lean Engineering at Embry-Riddle University, Sample Case Study: VLJ Re-Engine Project", Invited Talk at the Lean Aerospace Initiative Education Network (LAI EdNet) Summer workshop, Massachusetts Institute of Technology (MIT), Hosted by the Boeing Company, The Boeing Company Headquarters, July 31 – Aug 2, 2007, Chicago, Illinois.

Eastlake, C., and Attia, M., "Employing Lean Engineering Principles as a Student Exercise to Modify the Content of Traditional Aircraft and Propulsion Design Courses", AC 2007-268, presented at the 2007 ASEE Annual Conference and Exposition, June 24-27, 2007, Honolulu, Hawaii.

Attia, M., "Upgrade of A 16-Stage Industrial Compressor, Part I: Development Of An Innovative Performance Analysis Method", ASME GT2006-91186, presented at the ASME IGTI Turbo Expo, May 8-11, 2006, Barcelona, Spain.

PUBLICATIONS (Continued)

Attia, M., "Upgrade of A 16-Stage Industrial Compressor, Part II: Extension of the Analysis Method to the Design Function and Results", ASME GT2006-91199, presented at the ASME IGTI Turbo Expo, May 8-11, 2006, Barcelona, Spain.

Attia, M., Hemerly, C. "Modular Multi-Stage Axial Compressor Design: A Conceptual Study with an Example", ASME GT 2006-91053, presented at the ASME IGTI Turbo Expo, May 8-11, 2006, Barcelona, Spain.

Hemerly, C., Attia, M., "Modular Multi-Stage Axial Compressor Design: A LEAN Approach", presented at the LEAN Enterprise Value Plenary Conference, April 17-19, 2006, San Antonio, Texas. The paper won the best paper award at the conference.

Attia, M., Nakhla, H., Clark, A., Sikorski, J., and Vega, V., "Analysis and Design Modifications of Jet-Powered Dragster, Part I: Modeling, Structural, and Propulsion Assessment", AIAA 2006-0773, presented at the 44th AIAA Aerospace Sciences Meeting and Exhibit, Reno, Nevada, Jan 9-13, 2006

Nakhla, H., Attia, M., Clark, A., Sikorski, J., and Vega, V., "Analysis and Design Modifications of Jet-Powered Dragster, Part II: Aerodynamics, CFD, and Proposed Modifications", AIAA 2006-0774, presented at the 44th AIAA Aerospace Sciences Meeting and Exhibit, Reno, Nevada, Jan 9-13, 2006

Attia, M., "Semiviscous Method for Compressor Performance Prediction", *AIAA-Journal of Propulsion and Power*, 2005, Vol. 21, No. 5, pp 792-796

Attia, M., "A Semi-Viscous Method for Designing Axial Compressors", AIAA 2005-4540, presented at the 41st AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Tucson, Arizona, July 10-13, 2005

Attia, M., "A Semi-Viscous Method for Compressor Performance Prediction", AIAA 2004-3412, presented at the 40th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Ft. Lauderdale, Florida, July 11-14, 2004

Schobeiri, M.T, and Attia, M., "Active Aerodynamic Control of Multi-stage Axial Compressor Instability and Surge by Dynamically Adjusting the Stator Blades", *AIAA-Journal of Propulsion and Power,* 2003, Vol. 19, No. 2, pp 312-317

Schobeiri, M. T., and Attia, M., "Advances in Nonlinear Dynamic Engine Simulation Technology," ASME 96-GT-392, presented at the International Gas Turbine and Aero-Engine Congress and Exposition, Birmingham, UK, June 10- 13, 1996.

Schobeiri, M. T., and Attia, M., "Zur Entwicklung von Berechnungsverfahren zur Simulation Dynamischen Verhaltens von Strahltriebwerken und Stationären Gasturbinenanlagen", (*A Computational Method for Dynamic Simulation of Aero- and Stationary Gas Turbine Engines*), Zeitschrift für Flugwissenschaften und Wetraumforschung (*Journal of Flight Sciences and Space Research*), Berlin, 20, (1996), pp. 227-238.

Attia, M., and Schobeiri, M. T. "A New Method for the Prediction of Compressor Performance Maps Using One-Dimensional Row-by-Row Analysis", ASME paper 95-GT-434, presented at the IGTI-ASME Turbo Expo, Houston, Texas, June 5-8, 1995.

Schobeiri, M. T., Attia, M., and Lippke, C., "Nonlinear Dynamic Simulation of Single and Multi-Spool Core Engines, Part (I): Computational Method", *AIAA Journal of Propulsion and Power*, November 1994, Vol. 10, No. 6, pp. 855-862.

PUBLICATIONS (Continued)

Schobeiri, M. T., Attia, M., and Lippke, C., "Nonlinear Dynamic Simulation of Single and Multi-Spool Core Engines, Part (II): Simulation, Code Validation", *AIAA Journal of Propulsion and Power*, November 1994, Vol. 10, No. 6, pp. 863-867.

Schobeiri, M., Attia, M., and Lippke, C., "GETRAN: A Generic, Modularly Structured Computer Code for Simulation of Aero- and Power Generation Gas Turbine Engines", *ASME Journal of Engineering for Gas Turbines and Power*, July 1994, Vol. 116, pp. 483-494.

Schobeiri, T., and Attia, M., "Row-by-Row Performance Calculation Method for Turbines", *AIAA Journal of Propulsion and Power*, 1992 Vol.8, pp. 823-828.

PROFESSIONAL AFFILIATIONS

American Institute of Aeronautics and Astronautics (AIAA) – Senior Member
AIAA Technical Committee on Gas Turbine Engines – Member
Lean Aerospace Initiative (LAI) Academy of Instructors
ΣΓΤ (Sigma Gamma Tau) - National Aerospace Engineering Honor Society