

Daniel Lubell

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Oil-Free Machinery (www.oilfreemachinery.com)

Objective: Work with and advance the technology and energy efficiency of industrial or aerospace gas turbines and turbomachinery

Education: **Texas A&M University, Turbo Lab**, College Station, Texas (Dec 2000)
Masters in Mechanical Engineering

- Thesis research with building a test rig and experimental testing of Squeeze Film Dampers (SFDs)
- Course work focused on rotordynamics but included differential equations, finite element modeling, machining, testing instrumentation and techniques, and more.

Trinity University, San Antonio, Texas (May 1993)
Bachelors in Engineering Science (Mechanical specialty)
Minor in Mathematics

- Senior project dealt with design, construction and evaluation of a controlled particle size nebulizer
- Course work with engineering design, electronics, controls, strength of materials, and more.

Professional Experience: **Oil-Free Machinery**, California (Feb 2013 to Present)
- Founder and Chief Consultant

Daniel has worked with industrial and aerospace turbomachinery, and became specialized in oil-free and high speed system rotordynamics, bearings, and production transitions with over 20 years of hands-on R&D experience. Daniel has worked with industry leading technology in this area at Capstone Turbine, Honeywell Aerospace, and Calnetix Technologies. He has been a significant contributor to several new centerline designs for both conventional and oil-free systems and is as comfortable with design and test as he is with analysis.

- Rotordynamics
- Foil Bearings for High and Low Temperature Applications
- Magnetic bearings
- Conventional and Oil-Free turbomachinery design
- Transition from Prototype to Production Manufacturing

Calnetix Technologies, Cerritos, California (Nov 2012 to Feb 2015)

- Manager, Manufacturing Engineering (Operations)
- Manager, Rotating Machinery
- Manager and Engineer for elite engineering R&D team responsible for
 - Rotordynamics
 - Magnetic bearing controls
 - Magnetic bearing controller
 - Conventional and Oil-Free turbomachinery design

- Manager and Engineer of a high efficiency manufacturing engineering team responsible for specialized manufacturing processes related to turbomachinery
 - Carbon fiber and metal sleeve high speed rotor manufacturing
 - Winding motors and magnetic bearing actuators
 - Machine assembly
 - Power Electronics and Magnetic Bearing Controller manufacturing

Capstone Turbine, Chatsworth, California (May 2000 to Oct 2012)

- Manager, Rotordynamics and Bearings Technology
- Principal Engineer, Turbomachinery Rotating Systems
- Manager, Turbomachinery Rotating Systems
- Senior Rotordynamics and Bearings Engineer
 - Engineer and planner for outside foil bearing sales and contract engineering
 - Oil-Free foil bearings technical lead for the world leader in high speed (3.5 MDN, 96 krpm) oil-free gas turbines with cross-discipline skills in life/stress, performance and heat transfer for integrated system design
 - Manager of a high performance team responsible for rotordynamics and foil bearing design, including development and production for all product lines, later expanded to include all rotating components
 - Creation of project schedules and cost estimates, primarily for bids on external customer projects (outside foil bearing sales)
 - Identification, development, and ongoing support for suppliers of related components
 - Testing for vibration and bearing performance and life with high speed gas turbines and generators
 - Design and use of specialized equipment for air bearings and rotordynamics
 - Support production for new unit troubleshooting, field engine failure analysis, test cell configuration, and manufacturing tooling and processes
 - Lots of personal “hands-on” building and testing of high speed oil-free gas turbines, compressors, and test rigs

Pratt and Whitney (formerly Sundstrand) Power Systems, San Diego, California (Sep 1996 to May 2000)

Rotating Component Analyst and Test Engineer

- Rotordynamics of all new Auxiliary Power Units (APUs) and compact turbojets
- Stress analysis for rotating components and some static structure
- Engine testing for vibration on new and existing APUs
- Design and use of an all new rotordynamics test rig for use with new engine development
- Active research and testing projects for alternative bearing solutions

Specialized Skills:

Effective leader of small teams (~6 engineers) for new design efforts, product improvement, and special field projects (reliability)

Expert with most vibration and dynamics test equipment including spectrum analyzers (FFT), rotordynamics analysis acquisition tools (Bently Nevada,

Scientific Atlanta, IOTech/Zonic), prox probes, accelerometers, velocimeters, thermocouples, strain gauges and more

In-situ and Bench balancing experience

Expert with all standard office software (Word, Excel, Project...)

User of Finite Element Modeling (ANSYS FEM product line)

Capable with CAD software (CATIA, Unigraphics, Draftsight, Solidworks)

Unafraid of MRP programs (SAP, Globalshop)

Expert Geometric Dimensioning and Tolerancing (GD&T)

Very capable with mechanical and precision work, both hand and machine tools.

Professional

Memberships:

Society of Automotive Engineers (SAE), (former) member of Aerospace Standards Committee for Balancing

American Society of Mechanical Engineers (ASME) – active with ASME Turbo/IGTI

Society of Tribological Engineers (STLE)

Patents:

- 1) “Rotor and Bearing System for a Turbomachine,” US Patent No. 7,112,036.
- 2) “Compliant foil fluid film radial bearing or seal,” US Patent No. 7,614,792.

Short Courses:

- 1) "Gas Bearings and Magnetic Bearings for Oil-Free Rotating Machinery," 44th Turbomachinery Symposium (2014), Houston, TX.
- 2) "Gas Foil Bearings for Rotating Machinery," Texas A&M Turbomachinery Laboratory, April 2012 and 2013, Houston, TX.

Publications:

- 1) “Development of a High Speed Gas Bearing Test Rig to Measure Rotordynamic Force Coefficients,” ASME Journal of Engineering for Gas Turbines and Power, Vol 133, Oct. 2011, pp. 102504-1 thru 9.
- 2) “Identification and Correction of Rotor Instability in an Oil-Free Gas Turbine,” GT2008-50305, ASME Turbo Expo 2008.
- 3) “Successful Oil-Free Version of a Gas Compressor through Integrated Design of Foil Bearings,” GT2008-50349, ASME Turbo Expo 2008.
- 4) “Test Evolution and Oil-Free Engine Experience of a High Temperature Foil Air Bearing Coating”, GT2006-90572, ASME Turbo Expo 2006.
- 5) “Imbalance Response of a Test Rotor Supported on Squeeze Film Dampers,” ASME Journal of Engineering for Gas Turbines and Power, Vol. 120, 2, pp. 397-404, 1998 (ASME Paper 97-GT-12).
- 6) “Imbalance Response of a Squeeze Film Damper Supported Rotor,” Memorias del VI Congreso Latinoamericano de Turbomaquinaria, Mexico, November, pp. 89-96, 1997.

References: *available on request*

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