

THOMAS NEAL FARRIS

Dean, School of Engineering, Rutgers, Rutgers University
Busch Campus, Engineering Building B204, 98 Brett Road, Piscataway, NJ 08854-8058
Direct: (848)445-1640, Office: (848)445-2214, Cell: (732)491-3523
tfarris@rutgers.edu; soe.rutgers.edu

The appointment of Dean of Engineering at Rutgers University was made effective July 1, 2009 following twenty-three years of service at Purdue University, the last eleven as Head of the School of Aeronautics and Astronautics. The Rutgers University School of Engineering has seven academic departments, nine undergraduate degree and seven graduate degree programs, 147 tenured and tenure-track faculty, 60 staff members, more than 3600 undergraduates, more than 1000 graduate students, and five nationally recognized research centers. Well over 50% of the annual budget of approximately \$100 million is generated through research grants and contracts.

Education

Ph.D., Theoretical and Applied Mechanics, Northwestern University, 1986.
M.S., Theoretical and Applied Mechanics, Northwestern University, 1984.
B.S., Mechanical Engineering, Rice University, Cum Laude, 1982.

Awards and Professional Activities

- National Science Foundation Presidential Young Investigator Award, 1990
- Japan Society for the Promotion of Science Fellowship, 1991
- ASME Burt L. Newkirk Award, 1992
- NAE Frontiers of Engineering Conference, 1996
- ASME/Boeing Structures and Materials Award for outstanding paper of SDM 1998
- *Journal of Strain Analysis* 2002 P E Publishing Award
- AIAA: Fellow(2009); Associate Editor, *Journal of Aircraft*, 1992-1997; General Chair, Structures, Structural Dynamics and Materials Conference, 2001
- ASME: Fellow(2001); Member of Executive Committee of Applied Mechanics Division, 2002-2007; Associate Editor, *Journal of Tribology*, 1994-2000
- IMECHE: Member of Editorial Board, *Journal of Strain Analysis*, 1998-2011
- Consultant to Army Science Board, 2005-2009
- W.A. Gustafson Outstanding Undergraduate Teacher Award, 2008
- National Institute of Pharmaceutical Technology and Education, Board of Directors 2009-
- Engineers Without Borders-USA, Board of Directors, 2014-

Administrative Accomplishments at Rutgers

Improved undergraduate student recruitment, quality and retention by working closely with Enrollment Management, the School increased UG enrollment by 25% in five years and improved the entering student profile, achieving a 100 point increase in mean SAT scores for regularly admitted enrolling students over the same period. The School partnered with the Honors College in 2015 to see another increase incoming profile. The School also increased the number of women students in both its undergraduate and graduate programs. The Fall 2014 entering undergraduate class is 25% women with a record number of 190 (previous record 136 in 2011) achieved in part through the Living Learning Community established in partnership with Douglass Residential College. In 2010 45% (27 of 60) of PhDs awarded were to women making Rutgers #1 in the nation. Three of the four 4.0 May 2013 graduates are NJ community college graduates speaking to Rutgers being the Engineering School for all of the state's constituents. The success of the transfer students is enabled in part by the creation of the position assistant dean for transfer services and international programs in 2011. The number of first-year students from outside NJ tripled from ~50 in 2010 to ~150 in 2014. School to School and external transfers into Rutgers engineering is greater than the transfers out of the School so that the School has a negative attrition rate.

Strengthened graduate and research programs by providing structured support to key research centers. Success in this area is evidenced by a 51% increase in annual research expenditures since 2008. Among the most recent and significant awards to Engineering's centers and faculty are:

- National Science Foundation's Future Internet Architecture (FIA) award to WINLAB, the Wireless Information Network Laboratory
- University Transportation Center (UTC) designation, one of only five prestigious National UTC awards, to CAIT, the Center for Advanced Infrastructure and Transportation
- Army CRA to CCOMC (Ceramic, Composite, and Optical Materials Center) as a \$90M partnership lead by Johns Hopkins
- The 2014 Charles Pankow Award for Innovation from the American Society of Civil Engineers (ASCE) to Professor Nenad Gucunski and team for the Robotics Assisted Bridge Inspection Tool (RABIT)
- 2013 National Academy of Engineering (NAE) Charles Stark Draper Prize to Dick Frenkiel, WINLAB
- NAKFI Grant Award by the National Academies to Professor Narayan Mandayam, Peter D. Cherasia Faculty Scholar
- Five DoD Young Investigator and nine NSF CAREER Awards
- Leader of the NJ consortium that partnered with Virginia and Maryland to be designated by the FAA as one of six test sites to enable inclusion of Unmanned Air Systems (UAS) in the National Air Space.

Additionally, the ERC focused on Pharmaceutical Process and Design, made it through the final, critical NSF review process with the highest possible marks. The efforts these Centers are resourced, in part, by significant F&A return from the School.

The School's graduate enrollment increased by 50% over the five year period 2008-2013 to just over 1000 students. Ten graduate programs were ranked in the top 50 of *USNEWS* in 2013 for the first time.

Initiated strategic international partnerships in areas of particular educational and research strength by establishing the Engineering Office of International Programs in 2011 to develop dual degree, 3+2, and international transfer programs. Successful partnerships were established with International University and University of Technology, Vietnam, South China University of Technology, University of Electronic Science and Technology of China (UESTC), Beijing University of Chemical Technology, Harbin Institute of Technology, and Bahçeşehir University, Turkey. One example of success is the arrival of 24 3+2 students from UESTC in Fall 2013 in the first year of the partnership. Brazil's National Science Foundation is paying full tuition and fees for more than twenty Rutgers Engineering students. The students from partner institutions have an average CGPA at Rutgers of 3.60/4.00 representing the commitment of fully-engaged partner institutions to send their best and brightest. The presence of the international students in classes and on capstone design teams does much for the internationalization of the NJ students.

Developed professional and continuing professional education opportunities by establishing the Engineering Office of Lifelong Learning and Professional Education (LLPE) charged with building a portfolio of graduate and online course, certificate and graduate degree programs in engineering in 2011. The School began offering three fully-online degree programs in Fall 2013. The LLPE Associate Dean is the School's liaison with University Career Services focused on programming to increase placement rates. The School completed a successful ABET accreditation cycle with a fall 2012 visit that was focused on assessment of educational outcomes and objectives.

Increased faculty diversity by working successfully with University senior leadership to improve the racial-ethnic and cultural diversity of the faculty. Achieved significant increases in the number of women faculty members; 28 of 150 faculty are women in 2015 compared to 18 of 130 faculty in 2009. Two of seven Department Chairs are women while there were no female Chairs upon arrival in 2009. An informal poll at the recent Big 10+ Deans of Engineering meeting suggests that Rutgers is the only university among the twenty with more than one woman serving as Department Chair. The Dean's support for women faculty is acknowledged by campus leaders as a Rutgers success story.

Supported a collaborative approach to multi-disciplinary research efforts across academic departments, aligned centers and other schools. Initiated strategic joint faculty hires to leverage demonstrated strengths in Engineering and the sciences and encouraged broad research initiatives

through cost sharing and creative funding strategies. Rutgers Engineering faculty are leading the University's efforts to be a strategic partner of the state and local communities in recovery from Superstorm Sandy.

Enhanced academic/industry partnerships by establishing and actively increasing the size, profile, and level of engagement by the School's Industry Advisory Board (IAB) to cultivate support for collaborative research, internship, placement, and scholarship opportunities. The IAB has developed a formal structure that defines its role within the School and the university community. The IAB has been converted from a passive group to one that runs meetings and develops fundraising and engagement strategies for the School. Tom Kennedy, Raytheon CEO, and Ralph Izzo, PSEG CEO, served as Chairs of the two most recent Medal of Excellence Dinners, respectively. These events brought external focus to the School through corporate sponsorship and attendance of industry leaders from the state and region while increasing the profile of the School on campus. The Packaging Engineering Program is viewed as a model for engagement of industry through a Center of Excellence (CoE). The IAB is committed to working with the School to develop additional CoEs that will spur the state's industry leaders to approach state government on support for the School.

Communications and Outreach. The School hired its first communications and marketing director in August 2012. The improvement in communications across all mediums is extremely well-received by all stakeholders as is exemplified by the School website. The new site features fluid navigation, a visually modern look and feel, and messaging and themes which speak to the School's many constituencies—current and prospective students, alumni, industry partners, and engineering colleagues at universities around the world. For many, the website is their first introduction to SoE so offering a great experience from the first click to the last is essential to success. The Rutgers VP for University Relations notes that the School has made great strides in its communications efforts and looks forward to partnering with the School in its role as a priority of the University Strategic Plan.

The School broadened development activity by working collaboratively with the RU Foundation to meet and exceed the School's goal of \$50MM as part of the "Our Rutgers, Our Future" campaign. Rutgers Engineering has increased alumni engagement through well-orchestrated events on campus and around the country as well as implementing a professional communications strategy. The School portion of the Campaign includes approximately ten alumni that have made seven figure commitments. The School raised more than \$55 MM during the campaign.

Obtained Approval for the Rutgers Engineering Gateway Building Project through engagement of faculty, staff, students, and alumni to exceed the private fundraising goal of \$20 million. The lead gift required to name the facility "Richard Weeks Hall of Engineering" has been

secured. The project is featured prominently in the University strategic plan and the private fund-raising to date totals \$23.8 million. The \$84 million total project cost was approved by the Rutgers Board of Governors in June of 2015.

Previous Experience

Professor and Head, School of Aeronautics and Astronautics, Purdue University, 1998-2009; Professor, 1994-2009; Associate Professor, 1991-1994; Assistant Professor, 1986-1991. Taught and conducted research in aerospace structures and materials. Administered undergraduate and graduate education and research programs in School of Aeronautics and Astronautics. In 2009, the School had 29 faculty, 15 staff members, approximately 520 undergraduate and 270 graduate students and performed about \$8.5 million in externally funded research.

Sabbatical Visitor, Cambridge University Engineering Department, Fall, 1991. Hosted by Professor K.L. Johnson, plastic deformation and collapse of railway rail corners.

Fellow, Japan Society for the Promotion of Science, Summer, 1991. Hosted by Professor Y. Murakami of Kyushu University.

Service as External Evaluator and Advisory Boards

- Engineers Without Borders-USA Board of Directors, 2014-
- National Institute of Pharmaceutical Technology and Education Board of Directors, 2009-
- ABET visitor to 6 universities
- External Evaluator for University of British Columbia Mechanical Engineering Department
- External Evaluator for University at Buffalo Mechanical and Aerospace Engineering Department
- Rice University Mechanical Engineering and Materials Science Advisory Board

NRC Panels

- NRC/NMAB Committee on SBIR Research to Support Aging Aircraft, 1999-2000
- Decadal Survey of Civil Aeronautics Panel C: Structures and Materials, 2006
- Planning Committee for NMAB Workshop on Materials State Awareness, 2007

Administrative Accomplishments at Purdue

- Neil Armstrong Hall of Engineering
 - Dedicated October 27, 2007,
 - Selected for the 2008 American Institute of Architects, Indiana Chapter, Design Award of Merit.
 - \$57 million state of the art facility for education and research, School alumni and friends contributed a significant portion of the private funds.
- Faculty
 - Faculty head count increased from 21 to 29 including one NAE member
 - A range of national and international recognition of faculty
 - Eleven are fellow of at least one major society
- Students
 - Undergraduate enrollment increased from less than 200 to ~520 students with 55% being out-of-state US residents
 - Graduate enrollment increased from ~130 to ~270 students
 - Student recognition by major society awards
 - Initiated distance education MS program
- Research
 - School external research expenditures approximately doubled in the last five years
 - Initiated two new disciplines at the graduate level to leverage multi-disciplinary opportunities and align graduate program with NRC Aerospace Specializations
- Development
 - Increased annual School development activity from ~\$1 million to ~\$3 million
 - Initiated Purdue Outstanding Aerospace Engineer (OAE) alumni recognition program, OAEs provided the bulk of the School's fund raising for Armstrong Hall and Professorships
 - Established Boeing Distinguished Lectureship
- Climate and Inclusiveness
 - Award BS degrees to more women than any of Purdue's aerospace peers
 - Increased number of female faculty from one to five
 - Cited by Dean during reappointment review for great respect for my work by colleagues and staff as well as the belief that I do an excellent job of communicating with all stakeholders
- The External Review Committee (commissioned by the Dean of Engineering) stated the following in their final report to the Dean in December 2006. "The School of Aeronautics and Astronautics at Purdue University is an outstanding academic department which merits its high national rankings. The quality and productiveness of its faculty, staff and student body is high. Further, there is an important and apparent sense of collegiality and cooperation that speaks well for the administration of the School and the nature of the unit's sense of community."

Courses Taught at Purdue

1. A&AE 204 Aeromechanics II--Mechanics of Materials (3 credits, taught 18 times to an average of 55 students)
2. A&AE 352 Structural Analysis I (3 credits, taught 13 times to an average of 50 students)
3. A&AE 553 Elasticity in Aerospace Engineering (3 credits, taught 4 times to an average of 25 students)
4. A&AE 558 Finite Element Methods in Aerospace Structures (3 credits, taught 6 times to an average of 30 students)
5. A&AE 559 Mechanics of Friction and Wear (3 credits, taught 15 times to an average of 15 students)
6. A&AE 652 Theory of Plates and Shells (3 credits, taught 4 times to an average of 10 students)

Teaching Award

2008 W.A. Gustafson Outstanding Undergraduate Teacher Award:

- Presented annually to an Outstanding Teacher in the Purdue University School of Aeronautics and Astronautics, selected by the juniors and seniors of the student body for excellence in teaching

Course Evaluation Summary

The scores below are on a 5.0 base with 5 as the highest and 1 as the lowest

SEM	COURSE TITLE	COURSE #	ENROLL.	Course EVAL SCORE	Prof EVAL SCORE	AVG* SCHOOL Course SCORE	AVG* SCHOOL Prof SCORE
F01	Elasticity	553	18	4.2	4.3	4.3	4.5
S02	Aeromechanics II	204	39	4.1	4.6	4.2	4.5
F02	Structural Analysis I	352	82	3.9	4.2	3.9	4.2
S03	Mech of Friction and Wear	559	16	4.7	4.9	4.3	4.4
F03	Aeromechanics II	204	57	4.3	4.8	4.1	4.1
F04	Structural Analysis I	352	93	3.8	4.0	3.8	3.9
S05	Mech of Friction and Wear	559	16	4.7	4.9	4.2	4.3
F05	Aeromechanics II	204	38	4.2	4.4	4.0	4.0
F06	Aeromechanics II	204	62	4.1	4.7	3.9	4.0
S07	Mech of Friction and Wear	559	10	4.1	4.6	4.3	4.4
F07	Finite Elements	558	42	4.2	4.7	4.2	4.4
S08	Aeromechanics II	204	117	4.2	4.7	4.0	4.2
F08	Aeromechanics II	204	62	4.3	4.9	4.0	4.2
F08	Finite Elements	558	32	4.3	4.8	4.2	4.3

*Average School Score refers to the average score in the School of Aeronautics and Astronautics for the *level of course* (i.e., 200s, 300s, 600s) during the *semester offered*.

Research Activities Prof. Farris's research interests are in the area of aerospace structures and materials including tribology, manufacturing processes, and fatigue and fracture supported by funding totaling more than \$22 million of which TNF's share totals more than \$5 million.

Graduate Thesis Supervision at Purdue

Ph.D. Theses

1. Kim Billy Blair, May 1992, Founder/President, Sports Innovation Group, LLC, Boston.
2. Minzhu Liu, August 1992, Ford Automatic Transmission, Livonia, MI.
3. Shi-Yew (Sy) Chen, December 1993, NIST, Gaithersburg, MD.
4. Scott Hucker, August 1994, Manufacturing Engineering Manager, SAIC-GM-Wuling, Qingdao, China.
5. Yen-Meng (Neil) Chen, December 1994 (IE), Ceramics Manufacturing, Republic of China..
6. Yongqing Ju, May 1997, Gillette, Boston, MA.
7. Lisa Hill, August 1997, Project Engineer, Northrop Grumman, El Segundo, CA.
8. Matt Szolwinski, August 1998, Section Manager, Military Engines, GE Transportation, Cincinnati, OH (**ASME Marshall Petersen Award, 2000**).
9. Shih-Hsiang Chang, December 1998, Professor and Director of Center for International Affairs, Far East University, Republic of China.
10. Pam McVeigh, August 1999, Manager, ISS Structural Integrity, Boeing, Houston, TX.
11. Ganapathy Harish, August 2000, Owner, IQCAIS, Madras, India (**Best Paper SDM**).
12. Long Jin, August 2001, Armillaire Technologies, Inc
13. Yun Chen, August 2001, AutoDesk.
14. Pakalapati Rajeev, December 2001, Diamond Innovations, Technology Manager, Grinding Products and Coatings (**PE Publishing Award**).
15. Sridhar Kompella, August 2002 (IE), Diamond Innovations, Director, Mesh Technology.
16. Murthy N. Haradanahalli, August 2004, Professor of Aerospace Engineering, IIT Madras.
17. John F. Matlik, December 2004, Rolls-Royce Corporation (**Best Student Paper, SDM**).
18. Bence Bartha, May 2005, United Space Alliance (**Best Student Paper, ASTM**).
19. Guofeng Gao, August 2005, Research Engineer, Cooper Tire and Rubber.
20. Ihab Hanna, May 2006, GM Powertrain.
21. Shyama Kumari, May 2007, Pratt & Whitney.
22. Matthew C. Gean, August 2008, nanoPrecision Products, Inc.
23. Narayan K. Sundaram, May 2009, Assistant Professor, IIS Bangalore.

M.S. Theses

1. Robert Samuel, December 1988 (IE), Cummins Engine, Columbus, IN.
2. Shi-Yew (Sy) Chen, August 1989, obtained Ph.D. with TNF.
3. Yen-Meng (Neil) Chen, Dec 1990, obtained Ph.D. with Profs. Chandrasekar and Farris.
4. Scott Hucker, December 1990, obtained Ph.D. with TNF.
5. Lisa Hill, August 1992, obtained Ph.D with TNF.
6. James Mann, May 1994, CEO, M4 Sciences Corp, West Lafayette, IN.
7. Lisa Sack, May 1994, Rockwell, Houston, TX.
8. Steve Slijepcevic, May 1995, Allied Signal, South Bend, IN.
9. Bruce Varney, May 1995, Senior Specialist, Combustors & Casings Fleet & Special Projects, Rolls-Royce, Indianapolis, IN.
10. Matt Szolwinski, August 1995, obtained Ph.D. with TNF.
11. Pamela McVeigh, December 1995, obtained Ph.D. with TNF.
12. Tony Dunlap, Dec 1995, Eng. Supervisor, Adv Mfg Eng., Daimler Chrysler Tech Center.
13. Ganapathy Harish, August 1996, obtained Ph.D. with TNF.
14. Pakalapati Rajeev, August 1997, obtained Ph.D. with TNF.
15. Jeffrey Bougher, May 1998, CFO, M4 Sciences, West Lafayette, IN.
16. William Reimann, August 1998, Black Diamond Sporting Goods Manufacturer.
17. Sridhar Kompella, August 1998, obtained Ph.D with Profs. Chandrasekar and Farris.
18. Srinivasan Ganesh, August 1999(IE), Manufacturing Engineer, Cummins, India.
19. Christopher Tieche, December 1999, Product Specialist, W.L. Gore & Associates.
20. Bence Bartha, May 2000, obtained Ph.D. with TNF.
21. Murthy N. Haradanahalli, December 2000, obtained Ph.D. with TNF.
22. John F. Matlik, May 2001, obtained Ph.D. with TNF.
23. Eddie Perez-Ruberte, August 2001, Honeywell.
24. Matt Gean, May 2004, obtained Ph.D. with TNF.
25. Shyama Kumari, August 2004, obtained Ph.D. with TNF.
26. George Mseis, May 2006, in Ph.D. program at UC Berkeley.
27. Nathan Tate, December 2008, F-111 Structural Integrity Program Manager, RAAF.
28. Lucas Robinson, December 2009, Air Force Materiel Command.

External Examiner

- Daniele Dini, PhD entitled “Studies in Fretting Fatigue with Particular Application to Almost Compete Contacts,” University of Oxford, July 2004.

- Young Suk Kim, PhD entitled “A Draw-Bend Friction Test Applied to Measurement and Modeling of Anisotropic Friction on Sheet Metal,” McMaster University, November 2008.
- Saverio Reina, PhD entitled “A Study of Layered Contact Problems with Particular Application to Tyre-Wheel Interfaces,” Imperial College, May 2010
- Robert Paynter, PhD entitled “Ring Dislocations and Analysis of Complete Contacts,” University of Oxford, December 2010.

Visitors

- Prof. T. Sakagami, Osaka University, Spring and Summer, 1997.
- Prof. I.G. Goryacheva, Russian Academy of Sciences, Fall 1998, Fall 1999, Fall 2000, Fall 2001.
- Dr. M. Okane, Toyama University, 1999-2000 Academic Year.
- Jon Madariaga, PhD Candidate, University of Mondragon, 2007

Patents

1. S. Chandrasekar, W.D. Compton, T.N. Farris, and K.P. Trumble, K. P., “Methods of Forming Nano-Crystalline Structures and Product Formed Thereof,” U.S. Patent 6,706,324B2, issued March 16, 2004, Licensed.
2. S. Chandrasekar, W.D. Compton, T.N. Farris and K.P. Trumble, “Method of Forming Nano-Crystalline Structures and Product Formed Thereof,” U. S. Patent, 7,294,165B2, issued November 13, 2007, Licensed.
3. S. Chandrasekar, W.D. Compton, T.N. Farris and K.P. Trumble, “Method of Forming Nano-Crystalline Structures,” European Patent No. 1347852 issued August 15, 2007, Licensed.

Published Work

Google Scholar reports 3000+ citations with h-index of 29.

a. Books

1. *Small Business Innovation Research to Support Aging Aircraft: Priority Technical Areas and Process Improvements*, NRC Committee, National Academy Press, 2001.

b. Journal Articles

1. Farris, T.N. and Keer, L.M., “Williams’ Blister Test Analyzed as an Interface Crack Problem,” *International Journal of Fracture*, **27**(2),pp 91-103 (1985).
2. Keer, L.M., Farris, T.N., and Lee, J.C., “Knoop and Vickers Indentation in Ceramics Analyzed as a Three-Dimensional Fracture,” *Journal of the American Ceramic Society*, **69**(5), pp 392-396 (1986).

3. Keer, L.M. and Farris, T.N., "Effects of Finite Thickness and Tangential Loading on Development of Zones of Microslip in Fretting," *ASLE Transactions*, **30**(2), pp 203-210 (1987).
4. Lee, J.C., Farris, T.N., and Keer, L.M., "Stress Intensity Factors for Cracks of Arbitrary Shape Near an Interfacial Boundary," *Engineering Fracture Mechanics*, **27**(1), pp 27-41 (1987).
5. Farris, T.N., Keer, L.M., and Steele, R.K., "The Effect of Service Loading on Shell Growth in Rails," *Journal of the Mechanics and Physics of Solids*, **35**(6), pp 677-700 (1987).
6. Hanson, M.T., Keer, L.M., and Farris, T.N., "Energy Dissipation in Non-Hertzian Fretting Contact," *STLE Tribology Transactions*, **32**(2), pp 147-154 (1989).
7. Farris, T.N. and Doyle, J.F., "Wave Propagation in a Split Timoshenko Beam," *Journal of Sound and Vibration*, **130**(1), pp 137-147 (1989).
8. Sun, C.T. and Farris, T.N., "On the Completeness of The Westergaard Stress Functions," *International Journal of Fracture*, **40**(1), pp 73-77 (1989).
9. Farris, T.N. and Chandrasekar, S., "On the Characterization and Control of Surface Finishing Damage in Ceramics," *Journal of Mechanical Working Technology*, **20**, pp 69-78 (1989).
10. Samuel, R., Chandrasekar, S., Farris, T.N., and Licht, R.H., "The Effect of Residual Stresses on the Fracture of Ground Ceramics," *Journal of the American Ceramic Society*, **72**(10), pp 1960-1966 (1989).
11. Farris, T.N., Keer, L.M., and Steele, R.K., "Life Prediction for Unstable Shell Growth in Rails," *ASME Journal of Engineering for Industry*, **112**(2), pp 175-180 (1990).
12. Doyle, J.F. and Farris, T.N., "A Spectrally Formulated Finite Element for Flexural Wave Propagation in Beams," *International Journal of Analytical and Experimental Modal Analysis*, **5**(2), pp 99-107 (1990).
13. Chandrasekar, S., Farris, T.N., and Bhushan, B., "Grinding Temperatures for Magnetic Ceramics and Steel," *ASME Journal of Tribology*, **112**(3), pp 535-541 (1990).
14. Farris, T.N., and Chandrasekar, S., "High Speed Sliding Indentation of Ceramics: Thermal Effects," *Journal of Materials Science*, **25**(9), pp 4047-4053 (1990).
15. Doyle, J.F. and Farris, T.N., "A Spectrally Formulated Element for Wave Propagation in 3-D Frames," *International Journal of Analytical and Experimental Modal Analysis*, **5**(4), pp 223-237 (1990).
16. Chen, S.Y., Farris, T.N., and Chandrasekar, S., "Sliding Microindentation Fracture of Brittle Materials," *STLE Tribology Transactions*, **34**(2), pp 161-168 (1991).
17. Chandrasekar, S., Farris, T.N., Shaw, M.C., and Bhushan, B., "Surface Finishing Processes for Magnetic Recording Head Ceramics," *ASME Advances in Information Storage Systems*, **1**, pp 353-373 (1991).
18. Farris, T.N. and Doyle, J.F., "A GLOBAL/LOCAL Approach to Lengthwise Cracked Beams: Static Analysis," *International Journal of Fracture*, **50**, pp 131-141 (1991).

19. Farris, T.N., "Mechanics of Fretting Fatigue Tests of Contacting Dissimilar Elastic Bodies," *STLE Tribology Transactions*, **35**(2), pp 346-352 (1992).
20. Hebbar, R., Chandrasekar, S. and Farris, T.N., "Ceramic Grinding Temperatures," *Journal of the American Ceramic Society*, **75**(10), pp 2742-48 (1992).
21. Farris, T.N., and Doyle, J.F., "A GLOBAL/LOCAL Approach to Lengthwise Cracked Beams: Dynamic Analysis," *International Journal of Fracture*, **60**(2), pp 147-156 (1993).
22. Chauhan, R., Ahn, Y., Chandrasekar, S., and Farris, T.N., "Role of Indentation Fracture in Free Abrasive Machining of Ceramics," *Wear*, **162-164**, Part A, pp 246-257 (1993).
23. Hucker, S.A. and Farris, T.N., "Modified Crack Closure Method Using Boundary Elements," *Engineering Fracture Mechanics*, **46**(5), pp 763-772 (1993).
24. Liu, M. and Farris, T.N., "Three Dimensional Infinite Boundary Elements for Contact Problems," *International Journal for Numerical Methods in Engineering*, **36**(19), pp 3381-3398 (1993).
25. Farris, T.N. and Liu, M., "Boundary Element Crack Closure Calculation of Three Dimensional Stress Intensity Factors," *International Journal of Fracture*, **60**(1), pp 33-47 (1993).
26. Su, S.G. and Farris, T.N., "Generalized Characteristic Method of Elastodynamics," *International Journal of Solids and Structures*, **31**(1), pp 109-126 (1994).
27. Chen, S.Y. and Farris, T.N., "Boundary Element Crack Closure Calculation of Axisymmetric Stress Intensity Factors," *Computers and Structures*, **50**(4), pp 491-497 (1994).
28. Farris, T.N. and Chandrasekar, S., "Wear Mechanisms in Ceramic Machining," *Applied Mechanics Reviews*, **47**(6), Part 2, S204-208, (1994).
29. Liu, M. and Farris, T.N., "Effect of Three Dimensional Near Surface Defects on Rolling and Sliding Contact Fatigue," *ASME Journal of Tribology*, **116**(4), pp 841-849, (1994).
30. Mann, J.B., Farris, T.N., and Chandrasekar, S., "Effects of Friction on Contact of Transverse Ground Surfaces," *ASME Journal of Tribology*, **116**(3), pp 430-438, (1994).
31. Kurtz, R.D., Farris, T.N., and Sun, C.T., "The Numerical Solution of Cauchy Singular Integral Equations with Application to Fracture," *International Journal of Fracture*, **66**(2), pp 139-154 (1994).
32. Chen, S.Y., Farris, T.N., and Chandrasekar, S., "Contact Mechanics of Hertzian Cone Cracking," *International Journal of Solids and Structures; Special Topics in the Theory of Elasticity: A Volume in Honor of Professor John Dundurs*, **32**(3/4), pp 329-340 (1995).
33. Hill, L.R. and Farris, T.N., "Spectral Boundary Element Method for Transient Heat Conduction," *International Journal of Numerical Methods in Heat & Fluid Flow*, **5**(9), pp 813-827 (1995).
34. Doyle, J.F. and Farris, T.N., "Structural Mechanics Modeling of the Impact of a Double Cantilever Beam," *International Journal of Fracture*, **76**, pp 311-326 (1996).

35. Ahn, Y., Chandrasekar, S., and Farris, T.N., "Determination of Surface Residual Stresses in Machined Ceramics using Indentation Fracture," *ASME Journal of Manufacturing Science and Engineering*, **118**(4), pp 483-489 (1996).
36. Madhavan, V., Farris, T.N., Chandrasekar, S., and Craig, L., "FEM Comparison of Ball and Roller Bullgears," *STLE Tribology Transactions*, **39**(2), pp 286-295 (1996).
37. Farris, T.N., "Effect of Overlapping Wheel Passages on Residual Stress in Rail Corners," *Wear*, **191**(1-2), pp 226-236 (1996).
38. Ju, Y. and Farris, T.N., "Spectral Analysis of Two-Dimensional Contact Problems," *ASME Journal of Tribology*, **118**(2), pp 320-328 (1996).
39. Blair, K.B., Krousgrill, C.M., and Farris, T.N., "Non-linear Dynamic Response of Shallow Arches to Harmonic Forcing," *Journal of Sound and Vibration*, **194**(3), pp 355-367 (1996).
40. Szolwinski, M.P. and Farris, T.N., "Mechanics of Fretting Fatigue Crack Formation," *Wear*, **198**, pp 93-107 (1996).
41. Ju, Y. and Farris, T.N., "FFT Thermoelastic Solutions for Moving Heat Sources," *ASME Journal of Tribology*, **119**(1), pp 156-162 (1997).
42. Chandrasekar, S. and Farris, T.N., "Machining and Surface Finishing of Brittle Solids," *SADHANA-Academy Proceedings in Engineering Sciences*, **22**, Part 3, pp 473-481 (1997).
43. Bulsara, V.H., Ahn, Y., Chandrasekar, S., and Farris, T.N., "Polishing and Lapping Temperatures," *ASME Journal of Tribology*, **119**(1), pp 163-170 (1997).
44. McVeigh, P.A. and Farris, T.N. "Finite Element Analysis of Fretting Stresses," *ASME Journal of Tribology*, **119**(4), pp 797-801 (1997)
45. Blair, K.B., Krousgrill, C.M., and Farris, T.N., "Harmonic Balance and Continuation Techniques in the Dynamic Analysis of Duffing's Equation," *Journal of Sound and Vibration*, **202**(5), pp 717-731 (1997).
46. Chang, S.H., Balasubramhanya, S., Chandrasekar, S., Farris, T.N., and Hashimoto, F., "Forces and Specific Energy in Superfinishing of Hardened Steel," *Annals of the CIRP*, **46**(1), pp 257-260 (1997).
47. Hill, L.R. and Farris, T.N., "Three-Dimensional Piezoelectric Boundary Element Method," *AIAA Journal*, **36**(1), pp 102-108 (1998).
48. Bulsara, V.H., Chandrasekar, S., and Farris, T.N., "Mechanics of Polishing," *ASME Journal of Applied Mechanics*, **65**(2), pp 410-416 (1998).
49. Harish, G. and Farris, T.N., "Shell Modeling of Fretting in Riveted Lapjoints," *AIAA Journal*, **6**(6), pp 1087-1093 (1998).
50. Ahn, Y., Farris, T.N., and Chandrasekar, S., "Sliding Microindentation Fracture of Brittle Materials: Role of Elastic Stress Fields," *Mechanics of Materials*, **29**(3-4), pp 143-152 (1998).
51. Szolwinski, M.P. and Farris, T.N., "Observation, Analysis and Prediction of Fretting Fatigue in 2024-T351 Aluminum Alloy," *Wear*, **221**(1), pp 24-36 (1998).

52. Ju, Y., Farris, T.N., and Chandrasekar, S., "Theoretical Analysis of Heat Partition and Temperatures in Grinding," *ASME Journal of Tribology*, **120**(4), pp 789-794 (1998).
53. Hill, L.R. and Farris, T.N., "Piezoelectric Boundary Element Crack Closure Calculation of 3D Strain Energy Release Rates," *Journal of Intelligent Material Systems and Structures*, **9**(4), (1998).
54. Szolwinski, M.P, Harish, G., Farris T.N., and Sakagami, T., "In-Situ Measurement of Near-Surface Fretting Contact Temperatures in an Aluminum Alloy," *ASME Journal of Tribology*, **121**(1), pp 11-19 (color plots p 340) (1999).
55. Szolwinski, M.P., Matlik, J.F., and Farris, T.N., "Effects of HCF Loading on Fretting Fatigue Crack Nucleation," *International Journal of Fatigue*, **21**, pp 671-677 (1999).
56. McVeigh, P.A., Harish, G., Farris, T.N. and Szolwinski, M.P., "Modeling Contact Conditions in Nominally-Flat Contacts for Application to Fretting Fatigue of Turbine Engine Components," *International Journal of Fatigue*, **21**, pp S157-165 (1999).
57. Szolwinski, M.P., Harish, G., McVeigh, P.A. and Farris, T.N., "Experimental Study of Fretting Crack Nucleation in Aerospace Alloys with Emphasis on Life Prediction," *ASTM STP 1367, Fretting Fatigue: Current Technologies and Practices*, D.W. Hoepfner, V. Chandrasekaran and C.B. Elliot, Eds, pp 267-281 (2000).
58. Harish, G., Szolwinski, M.P., Farris, T.N. and Sakagami, T., "Evaluation of Fretting Stresses Through Full-Field Temperature Measurements," *ASTM STP 1367, Fretting Fatigue: Current Technologies and Practices*, D.W. Hoepfner, V. Chandrasekaran and C.B. Elliot, Eds, pp 423-435 (2000).
59. Farris, T.N., Szolwinski, M.P. and Harish, G., "Fretting in Aerospace Structures and Materials," *ASTM STP 1367, Fretting Fatigue: Current Technologies and Practices*, D.W. Hoepfner, V. Chandrasekaran and C.B. Elliot, Eds pp 523-537 (2000).
60. Chang, S-H., Farris, T.N., and Chandrasekar, S., "Contact Mechanics of Superfinishing," *ASME Journal of Tribology*, **122**, #2, pp 388-393 (2000).
61. Szolwinski, M.P. and Farris, T.N., "Linking Riveting Process Parameters to the Fatigue Performance of Riveted Aircraft Structures," *AIAA Journal of Aircraft*, **37**(1), pp 130-137 (2000).
62. Madhavan, V., Chandrasekar, S. and Farris, T.N., "Machining as a Wedge Indentation," *ASME Journal of Applied Mechanics*, **67**(1), pp 128-139 (2000).
63. Farris, T.N., Harish, G., Tieche, C., Sakagami, T., Szolwinski, M.P., "Experimental Tools for Characterizing Fretting Contacts," *JSME International Journal Series A-Mechanics and Material Engineering*, **43**(4), pp 374-383 (2000).
64. Goryacheva, I.G., Rajeev, P.T. and Farris, T.N., "Wear in Partial Slip Contact," *ASME Journal of Tribology*, **123**(4), pp 848-856 (2001).
65. Ackroyd, B., Akcan, S., Chhabra, P., Krishnamurthy, K, Madhavan, V., Chandrasekar, S., Compton, W.D., and Farris, T.N., "Exploration of Contact Conditions in Machining," *Proceedings of the I MECH E, Journal Part B, Engineering Manufacture*, **215**(B4), pp 493-507 (2001).

66. Kompella, S., Farris, T.N., and Chandrasekar, S., "Techniques for Rapid Characterization of Grinding Wheel-Workpiece Combinations," *Proceedings of the I MECH E Journal, Part B, Engineering Manufacture*, **215**(B10), pp 1385-1395 (2001).
67. Madhavan, V., Chandrasekar, S. and Farris, T.N., "Direct Observations of the Chip-Tool Interface in the Low Speed Cutting of Pure Metals," *ASME Journal of Tribology*, **124**(3), pp 617-626 (2002).
68. Goryacheva, I.G., Murthy, H. and Farris, T.N., "Contact Problem with Partial Slip for the Inclined Punch with Rounded Edges," *International Journal of Fatigue*, **24**, pp 1191-1201 (2002).
69. Rajeev, P.T. and Farris, T.N., "Numerical Analysis of Fretting Contacts of Dissimilar Isotropic and Anisotropic Materials," *Journal of Strain Analysis*, **37**(6), pp 503-517, (2002)[P E Publishing Award].
70. Murthy, H., Rajeev, P.T., Okane, M., Farris, T.N., "Development of Test Methods for High Temperature Fretting of Turbine Materials Subjected to Engine-Type Loading," *ASTM STP 1425, Fretting Fatigue: Advances in Basic Understanding and Applications*, Y.Mutoh, S.E. Kinyon and D.W. Hoepfner, Eds. pp 273-288 (2003).
71. Matlik, J.F. and Farris, T.N., "Development of Test Methods for High Frequency Fretting Fatigue," *ASTM STP 1425, Fretting Fatigue: Advances in Basic Understanding and Applications*, Y.Mutoh, S.E. Kinyon and D.W. Hoepfner, Eds. pp 251-272 (2003).
72. Moylan, S.P., Kompella, S., Chandrasekar, S. and Farris, T.N., "A New Approach for Studying Mechanical Properties of Thin Surface Layers Affected by Manufacturing Processes," *ASME Journal of Manufacturing Science and Engineering*, **125**, pp 310-315 (2003).
73. Chang, S-H., Farris, T.N. and Chandrasekar, S., "Experimental Characterization of Superfinishing," *Proceedings of the I MECH E Journal, Part B, Engineering Manufacture*, **217**(B7), pp 941-951 (2003).
74. Hwang, J., Kompella, S., Chandrasekar, S. and Farris, T.N., "Measurement of Temperature Field in Surface Grinding using Infra-Red (IR) Imaging System," *ASME Journal of Tribology*, **125**, pp 377-383 (2003).
75. Murthy, H., Harish, G. and Farris, T.N., "Efficient Modeling of Fretting of Blade/Disk Contacts Including Load History Effects," *ASME Journal of Tribology*, **126**, pp 56-64 (2004).
76. Rajeev, P.T., Murthy, H. and Farris, T.N., "Load History Effects on Fretting Contacts of Isotropic Materials," *ASME Journal of Engineering for Gas Turbines and Power*, **126**, pp 385-390 (2004).
77. Shankar, M. Ravi, Chandrasekar, S. and Farris, T.N., "Interaction Between Dislocations in a Couple Stress Medium," *ASME Journal of Applied Mechanics*, **71**, pp 546-550 (2004).
78. Murthy, H., Garcia, D.B., Matlik, J.F. and Farris, T.N., "Fretting Fatigue of Single Crystal/Polycrystalline Nickel Subjected to Blade/Disk Contact Loading," *Acta Astronautica*, **57**(1), pp 1-9 (2005).

79. Bartha, B.B., Zawadzki, J., Chandrasekar, S., and Farris, T.N., "Wear Performance of Hard Turned AISI 52100 Steel," *Metallurgical and Materials Transactions A-Physical Metallurgy and Materials Science*, **36A**(6), pp 1417-1425 (2005).
80. Bartha, B.B., Nicholas, T., and Farris, T.N., "Modeling of Geometry Effects in Fretting Fatigue," *Tribology International*, Special Issue for 4th International Symposium on Fretting Fatigue, **39**(10), pp 1131-1141 (2006).
81. Murthy, H., Gao, G. and Farris, T.N., "Fretting Fatigue of Single Crystal Nickel at 600°C," *Tribology International*, Special Issue for 4th International Symposium on Fretting Fatigue, **39**(10), pp 1227-1240 (2006).
82. Matlik, J.F., Farris, T.N., Haake, F.K., Swanson, G.R. and Duke, G.C., "High-Frequency, High-Temperature Fretting-Fatigue Experiments," *Wear*, **261**(11-12), pp 1367-1382 (2006).
83. Chang, S-H., Farris, T.N. and Chandrasekar, S., "Experimental Analysis on Evolution of Superfinished Surface Texture," *Journal of Materials Processing and Technology*, **203**, pp 365-371 (2008).
84. Jameson, J.R., Farris, T.N. and Chandrasekar, S., "Equilibrium and Compatibility Simulation of Plunge Centerless Grinding," *Proceedings of the I MECH E Journal, Part B, Engineering Manufacture*, **222**(7), pp 747-757 (2008).
85. Sundaram, N. and Farris, T.N., "Numerical Analysis of Double Contacts of Similar Elastic Materials," *ASME Journal of Applied Mechanics*, **75**(6), pp 061017, 1-9 (2008).
86. Sundaram, N. and Farris, T.N., "Bulk Stress Effects in Double Contacts of Similar Elastic Materials," *International Journal of Solids and Structures*, **46**(5), pp 1229-1239 (2009).
87. Sundaram, N. and Farris, T.N., "Multiple Contacts of Similar Elastic Materials," *ASME Journal of Tribology*, **131**(2), pp 21405, 1-11 (2009).
88. Rajeev, P.T., Jin, L., Farris, T.N. and Chandrasekar, S., "Modeling of Quenching and Tempering Induced Phase Transformations in Steels," *Journal of ASTM International*, **6**(5), 19 pages (2009).
89. Sundaram, N. and Farris, T.N., "Analytical Solutions for Inherently Incremental, Similar Elastic Contact Problems with Bulk Stress," *International Journal of Solids and Structures*, **46**(14-15), pp 2834-2841 (2009).
90. Murthy, H, Mseis, G., and Farris, T.N., "Life Estimation of Ti-6Al-4V Specimens Subjected to Fretting Fatigue and Effect of Surface Treatment," *Tribology International* **42**(9), pp 1304-1315 (2009).
91. Sreeram, S., Garcia, D.B., Gean, M.C., Murthy, H., and Farris, T.N., "Fretting Fatigue Testing of Laser Shock Peened Ti-6Al-4V," *Tribology International*, **42**(9), pp 1324-1329 (2009).
92. Gean, M.C. and Farris, T.N., "Elevated Temperature Fretting Fatigue of Ti-17," *Tribology International* **42**(9), pp 1340-1345 (2009)
93. Matlik, J.F., Farris, T.N., Haynes, J., Swanson, G.R., and Ham-Batista, G., "Prediction of Fretting Crack Location and Orientation in a Single Crystal Nickel Alloy," *Mechanics of Materials*, **41**(10), pp 1133-1151 (2009).

94. Sundaram, N. and Farris, T.N., "The Generalized Advancing Conformal Contact Problem with Friction, Pin Loads and Remote Loading—Case of Rigid Pin," *International Journal of Solids and Structures*, **47**, #6, pp 801-815 (2010).
95. Sundaram, N. and Farris, T.N., "Mechanics of Advancing Pin-loaded Contacts with Friction," *Journal of the Mechanics and Physics of Solids*, **58**, #11, pp 1819-1833 (2010).
96. Gean, M.C. and Farris, T.N., "Mechanics Modeling of the Contact Loads on Dovetail Attachments," *Journal of Applied Mechanics*, **78**, #2, pp 021004-1-6 (2011).
97. Sundaram, N., Farris, T.N., and Chandrasekar, S., "JKR Adhesion in Cylindrical Contacts," *Journal of the Mechanics and Physics of Solids*, **60**, #1, pp 37-64 (2011).

c. Journal Technical Notes and Research Reports

1. Farris, T.N., Kokini, K., and Demir, I., "The Cylindrical Crack," *ASME Journal of Applied Mechanics*, **56**(4), pp 981-983 (1989).
2. Beaumont, M., Farris, T.N., and Sun, C.T., "Scratch Testing of Advanced Composite Surfaces," *Composites---Part A: Applied Science and Manufacturing*, **28A**, pp 683-686 (1997).

d. Book Chapters

1. Doyle, J.F., and Farris, T.N., "Analysis of Wave Motion in 3-D Frame Structures Using Spectral Methods," *Computational Aspects of Contact, Impact and Penetration*, Ed. R.F. Kulak and L.E. Schwer, Elme Press International, Lausanne Switzerland, pp 197-219 (1991).
2. Farris, T.N., Xu, Y., and Keer, L.M., "Some Factors Influencing the Transition from Shelling to Detail Fracture," *Residual Stress in Rails: Effects on Rail Integrity and Railroad Economics, Volume II: Theoretical and Numerical Analyses*, Ed. O. Orringer, J. Orkisz, and Z. Swiderski, Kluwer, Boston, pp 23-44 (1992).
3. Chen, Y.M., Farris, T.N., and Chandrasekar, S., "Precision Crack-Off of Ceramics," *Fracture Mechanics of Ceramics, Volume 10: High-Temperature Deformation, Damage, and Design*, Ed. R.C. Bradt, et al, Plenum, pp 271-290 (1992).
4. Lu, L, Farris, T.N., and Chandrasekar, S., "Sliding Microindentation Wear Particles: Spheres in Grinding Swarf," *WEAR PARTICLES: From the Cradle to the Grave*, Ed. D. Dowson, C.M. Taylor, T.H.C. Childs, M. Godet, and G. Dalmaz, Elsevier, pp 257-263 (1992).
5. Ahn, Y., Farris, T.N., and Chandrasekar, S., "Elastic Stress Fields Caused by Sliding Microindentation of Brittle Materials," *Machining of Advanced Materials*, NIST SP 847, pp 71-81 (1993).
6. Ahn, Y., Chandrasekar, S., and Farris, T.N., "Measurement of Residual Stresses in Machined Ceramics using the Indentation Technique," *Machining of Advanced Materials*, NIST SP 847, pp 135-146 (1993).
7. Ahn, Y., Hebbar, R., Chandrasekar, S., and Farris, T.N., "Magnetic Damage in Mn-Zn and Ni-Zn Ferrites Induced by Abrasion," *Dissipative Processes in Tribology*, Ed. D. Dowson, C.M. Taylor, T.H.C. Childs, M. Godet, and G. Dalmaz, Elsevier, pp 117-123 (1994).

8. Chandrasekar, S., Farris, T.N., and Bhushan, B., "Ceramics for Magnetic Recording Applications," *Friction and Wear of Ceramics*, Ed. S. Jahanmir, Marcel Dekker, pp 383-424 (1994).
9. Chandrasekar, S., Farris, T.N., Hebbar, R.R., Hucker, S.A., and Bulsara, V.H., "Thermal Aspects of Surface Finishing Processes," *ASM Handbook*, **5**, *Surface Engineering*, pp 152-157 (1994).
10. Doyle, J.F., Farris, T.N., and Martin, M.T., "Crack Identification in Frame Structures," *Dynamic Fracture Mechanics*, ed. M.H. Aliabadi, Comp Mech Pub, pp 237-283 (1995).
11. Chandrasekar, S. and Farris, T.N., "Model of Free Abrasive Machining for Glasses and Brittle Ceramics," *Ceramic Transactions, Volume 50: Design for Manufacturability of Ceramic Components*, pp 233-251 (1995).
12. Madhavan, V., Chandrasekar, S., and Farris, T.N., "Mechanistic Model of Machining as an Indentation Process," *Materials Issues in Machining and the Physics of Machining Processes III*, eds D.A. Stephenson and R. Stevenson, TMS, pp 187-208 (1996)
13. Farris, T.N., "Tribology," *Rules of Thumb for Mechanical Engineers*, Gulf, pp 226-237 (1996).
14. Bulsara, V.H., Chandrasekar, S., and Farris, T.N., "Scratch Testing," *ASM Handbook*, **8**, *Mechanical Testing and Evaluation*, pp 317-324 (2000).
15. Moylan, S.P., Kompella, S., Chandrasekar, S., and Farris, T.N., "A Nano-Indentation Study of Mechanical Properties of Thin Surface Layers Affected by Manufacturing Processes," *Tribology Research: From Model Experiment to Industrial Problem, A Century of Efforts in Mechanics, Materials Science and Physico-Chemistry*, ed by G. Dalmaz, A.A. Lubrecht, D. Dowson and M. Priest, Elsevier, pp 895-903 (2001).
16. Murthy, H., Farris, T.N., and Slavik, D.C. "Fretting Fatigue of Ti-6Al-4V Subjected to Blade/Disk Contact Loading," *Developments in Fracture Mechanics for the New Century*, 50th Anniversary of Japan Society of Materials Science, Osaka, May 2001, pp 41-48 (2001).
17. Farris, T.N., Murthy, H., and Matlik, J.F., "Fretting Fatigue," *Comprehensive Structural Integrity Fracture of Materials from Nano to Macro; Volume 4: Cyclic Loading and Fatigue*, ed. by R.O. Ritchie and Y. Murakami, Elsevier, pp 281-326 (2003).

e. Technical Reports

1. Farris, T.N., Keer, L.M., and Steele, R.K., "Life Prediction for Unstable Shell Growth in Rails," AR Report No. WP-130, October 1987.

f. Conference Proceedings and Selected Conference Presentations

1. Keer, L.M., Farris, T.N., and Steele, R.K., "On Some Aspects of Fatigue Crack Growth in Rails Induced by Wheel/Rail Contact Loading," *Proc. 2nd Int. Symposium on Contact Mechanics and Wear of Rail/Wheel Systems*, University of Waterloo Press, pp 327-338, University of Rhode Island, July 1986.
2. Doyle, J.F., Farris, T.N., and Ledington, H.M., "Response of a Delamination Crack to Flexural Waves," *Proc. Int. Conf. on Photomechanics and Speckle Metrology*, SPIE 814, pp 655-661, San Diego, CA, August 1987.

3. Farris, T.N., "Friction Laws and Fretting Fatigue," *Proc. 20th Midwestern Mechanics Conf.*, pp 1128-1133, Purdue University, August 31 - September 2, 1987.
4. Doyle, J.F., Farris, T.N., and Ledington, H.M., "Interaction of a Flexural Wave with a Lengthwise Crack in a Beam," *Proc. 6th Int. Congress on Experimental Mechanics, SEM*, pp 1253-1260, Portland, Oregon, June 1988.
5. Samuel, R., Chandrasekar, S., Farris, T.N., and Licht, R.H., "The Effect of Residual Stresses on the Fracture of Ground Ceramics," *Proc. ACS/ASME/AES Intersociety Symposium on Machining of Advanced Ceramic Materials and Components*, pp 81-98, ASME WAM, Chicago, IL, November 28 - December 2, 1988.
6. Farris, T.N., Kokini, K., and Demir, I., "The Pressurized Cylindrical Crack," *Proc. Seventh Int. Conf. on Fracture*, pp 55-62, Houston, Texas, March 1989.
7. Farris, T.N., and Chandrasekar, S., "Effect of Thermal Loading on Surface and Subsurface Flaws in Sliding Ceramic Interfaces," *Proc. 5th Int. Congress on Tribology (Eurotrib 89)*, 3, pp 88-93, Espoo, Finland, June 1989.
8. Doyle, J.F., and Farris, T.N., "Design of Structural Joints for Dynamic Response," *Proc. 21st Midwest Mechanics Conf.*, pp 187-188, Michigan Technological University, August 1989.
9. Shamsunder, G., Hebbar, R., Chandrasekar, S., and Farris, T.N., "Abrasive-Tip Temperature Measurements During the Grinding of Ceramics," *Proc. Symposium on the Mechanics of Grinding*, pp 267-280. ASME WAM, San Francisco, CA, December 1989.
10. Doyle, J.F. and Farris, T.N., "Spectral Analysis of Impact Induced Wave Propagation in Frames," *Proc. Symposium on Computational Techniques for Impact, Penetration, and Perforation of Solids*, pp 9-29, ASME-WAM, San Francisco, CA, December 1989.
11. Farris, T.N. and Chandrasekar, S., "Fine Finishing of Ceramics," *Proc. 16th Annual NSF Grantees Conf. On Manufacturing Systems Research*, pp 459-461, Arizona State University, January 1990.
12. Doyle, J.F. and Farris, T.N., "Interaction of Longitudinal Waves with a Lengthwise Crack in a Beam," *Proc. 1990 SEM Spring Conf. on Experimental Mechanics*, pp 27-33, Albuquerque, New Mexico, June 1990.
13. Chen, Y.M., Duffy, V., Hebbar, R., Chandrasekar, S., and Farris, T.N., "Surface Finishing Studies on Ceramics," *Proc. 17th Annual NSF Grantees Conf. On Manufacturing Systems Research*, pp 187-191, University of Texas, January 1991.
14. Hucker, S.A., and Farris, T.N., "The Crack Closure Method Using Boundary Elements," *Proc. 22nd Midwest Mechanics Conf.*, pp 565-566, University of Missouri-Rolla, October 1991.
15. Hebbar, R., Ahn, Y., Chandrasekar, S., and Farris, T.N., "Surface Damaged Layers in Lapped Surfaces of Magnetic Ceramics," *Proc. 18th Annual NSF Grantees Conf. on Manufacturing Systems Research*, pp 89-92, Georgia Tech, January 1992.
16. Blair, K.B., Krousgrill, C.M., and Farris, T.N., "Nonlinear Dynamic Response of Shallow Arches," *Proc. 33rd AIAA/ASME/ASCE/ASC Structures, Structural Dynamics, and Materials Conf.*, pp 2376-2384, Dallas, Texas, April 1992.

17. Chauhan, R., Ahn, Y., Chandrasekar, S., and Farris, T.N., "Precision Finishing of Ceramics: Prediction of Surface Roughness and Depth of Plastic Zone in Free Abrasive Machining," *Proc. 19th Annual NSF Grantees Conf. on Manufacturing Systems Research*, University of North Carolina Charlotte, pp 49-62, January 1993.
18. Hill, L. and Farris, T.N., "A Spectral Boundary Element Method for Transient Heat Conduction and Elasticity Problems," *Proc. 34th AIAA/ASME/ASCE/ASC Structures, Structural Dynamics, and Materials Conf.*, La Jolla, CA, pp 1291-1301, April 1993.
19. Chandrasekar, S. and Farris, T.N., "Surface Finishing Damage in Ceramics," *Proc. 1st Int. Symp. on Tribology*, Beijing, China, pp 380-389, October 1993.
20. Chen, S.Y., Farris, T.N., and Chandrasekar, S., "Experimental and Boundary Element Analysis of Hertzian Cone Cracking," *Proc. Symp. on Fatigue and Fracture of Aerospace Structural Materials*, pp 135-150, ASME WAM, New Orleans, LA, November 1993.
21. Hucker, S.A., Farris, T.N., Chandrasekar, S., "Estimation of Contact Stiffness for Grinding of Hardened Steel," *Proc. Symp. on Contact Problems and Surface Interactions in Manufacturing and Tribological Systems*, pp 191-198, ASME WAM, November 1993.
22. Chandrasekar, S. and Farris, T.N., "Precision Finishing of Ceramics: Elastic Stress Fields Produced by Sliding Indentation of Brittle Solids," *Proc. 20th Annual NSF Grantees Conf. on Manufacturing Systems Research*, MIT, January 1994.
23. Szolwinski, M.P. and Farris, T.N., "Fretting Fatigue Crack Initiation: Aging Aircraft Concerns," *Proc. 35th IAA/ASME/ASCE/ASC Structures, Structural Dynamics, and Materials Conf.*, pp 2173-2179, Hilton Head, SC, April 1994.
24. Blair, K.B., Krousgrill, C.M., and Farris, T.N., "Dynamic Response of a Shallow Arch to Antisymmetric, Harmonic Loading," *Proc. 5th Conf. Structural Dynamics: Recent Advances*, pp 326-339, Southampton, UK, July 1994.
25. Hillberry, B.M., Grandt, A.F., Farris, T.N., and McCabe, G.P., "Widespread Fatigue Analysis of Aircraft Structures," *Proc. Air Force 3rd Aging Aircraft Conference*, pp 291-305, WPAFB, September 1995.
26. Szolwinski, M.P. and Farris, T.N., "Mechanics of Fretting Fatigue Crack Formation," *ASME Symp. on Structural Integrity of Aging Aircraft*, pp 141-157, San Francisco, November 1995.
27. Szolwinski, M.P., Harish, G., and Farris, T.N., "Experimental Observation of the Effect of Contact Parameters on Fretting Fatigue Crack Nucleation," *Proc. USAF Structural Integrity Program Conf.*, pp 237-265, San Antonio, November, 1995.
28. Chandrasekar, S. and Farris, T.N., "Machining and Surface Finishing of Brittle Solids," *Proc. Int. Conf. on Advances in Mechanical Engineering*, pp 123-127, Bangalore, India, December 1995, also printed in *Sādhanā-Academy Proceedings in Engineering Sciences* **22**, Part 3, pp 473-481 (1997).
29. Chandrasekar, S., Farris, T.N., Bulsara, V.H., Hucker, S.A., Hebbar, R.R., and Mann, J.B., "Thermal Aspects of Surface Finishing Processes," *Proc. Int. Conf. on Advances in Mechanical Engineering*, pp 677-701, Bangalore, India, December 1995.

30. Farris, T.N., Grandt, A.F., Harish, G., Wang, H.L., "Analysis of Widespread Fatigue Damage in Structural Joints," *Proc. 41st Int. SAMPE Symp.*, pp 65-79, Los Angeles, March 1996.
31. Woodard, P.R., Farris, T.N., Chandrasekar, S., and Yang, H.T, "Effect of Cylinder Diameter on Quenching Induced Residual Stress," *Trans. North American Manufacturing Research Inst of SME, XXIV*, pp 205-210, 1996.
32. Farris, T.N., Grandt, A.F., Harish, G., McVeigh, P.A., Szolwinski, M.P., and Wang, H.S., "Fretting Fatigue Crack Nucleation and Propagation in Structural Joints," *Proc. Air Force 4th Aging Aircraft Conference*, Colorado Springs, pp 141-165, July 1996.
33. Szolwinski, M.P., Harish, G., McVeigh, P.A., and Farris, T.N., "The Role of Fretting Crack Nucleation in the Onset of WFD: Analysis and Experiments," *Proc. FAA-NASA Symp. on Continued Airworthiness of Aircraft Structures*, pp 585-596, Atlanta, August 1996.
34. Ju, Y., Farris, T.N., and Chandrasekar, S., "Heat Partitioning and Temperatures in Grinding," *ASME MED Vol 4, Manufacturing Science and Engineering*, pp 259-266, Atlanta, November 1996.
35. Hill, L.R. and Farris, T.N., "Three-Dimensional Piezoelectric Boundary Elements," *Proc. Smart Structures and Materials Conf.*, SPIE Vol. 3039, pp 406-417, San Diego, March 1997.
36. Harish, G. and Farris, T.N., "Modeling of Skin/Rivet Contact: Application to Fretting Fatigue," *Proc. 38th AIAA/ASME/ASCE/ASC Structures, Structural Dynamics, and Materials Conf.*, pp 2761-2771, Kissimmee, FL, April 1997.
37. Mann, J.B., Farris, T.N. and Chandrasekar, S., "A Model for Grinding Burn," *Proc. 1st SAE Aerospace Manufacturing Technology Conf*, pp 253-264, #972247, Seattle, WA, June 1997.
38. Grandt, A.F., Farris, T.N. and Hillberry, B.M., "Analysis of the Formation and Propagation of Widespread Fatigue Damage," *ICAF 97, Fatigue in New and Ageing Aircraft*, Proc. of the 19th Symp. Int. Committee on Aeronautical Fatigue, Edinburgh, Scotland, Ed P. Poole and R. Cook, **1**, pp 115-133, June 1997.
39. Harish, G., Szolwinski, M.P. and Farris, T.N., "Finite Element Modeling of Rivet Installation and Riveted Joints for the Prediction of Fretting Crack Nucleation," *Proc. 1st Joint DoD/FAA/NASA Conf. on Aging Aircraft*, Ogden, UT, pp 647-663, July 1997.
40. Szolwinski, M.P., Harish, G., Farris, T.N. and Sakagami, T., "An Experimental Study of Fretting Crack Nucleation in Airframe Alloys: A Life Prediction and Maintenance Perspective," *Proc. 1st Joint DoD/FAA/NASA Conf. on Aging Aircraft*, Ogden, UT, pp 1247-1262, July 1997.
41. Hill, L.R. and Farris, T.N., "Three-Dimensional Boundary Elements for Flawed Piezoelectric Materials," *Proc. 3rd ARO Workshop on Smart Structures*, Section 10, Blacksburg, VA, August 1997.
42. Varney, B.E. and Farris, T.N., "Mechanics of Roller Straightening," *Proc. 39th Mechanical Working and Steel Processing Conf.*, **ISS Vol 35**, pp 1111-1121, Indianapolis, IN, October 1997.

43. Szolwinski, M.P., Sakagami, T., Harish, G. and Farris, T.N., "The Use of Thermal Imaging for In-Situ Characterization of Frictional Behavior in Mixed-Mode Fretting Contact," *Proc. Symp. on Strength and Fracture of Materials*, CD ROM, Tokyo, Japan, November 1997.
44. Szolwinski, M.P., Harish, G. and Farris, T.N., "Comparison of Fretting Fatigue Crack Nucleation Experiments to Multiaxial Fatigue Theory Life Predictions," *Proc. IMECE Sym. on Structural and Aero Mechanical Research in High Cycle Fatigue*, Dallas, TX, AD-Vol 55, pp 449-457, November 1997.
45. Madhavan, V., Chandrasekar, S. and Farris, T.N., "Direct Observations of the Chip-Tool Interface in Machining," *Proc. IMECE Sym. on Predictable Modeling of Metal Cutting as Means of Bridging Gap Between Theory and Practice*, Dallas, TX, MED-Vol. 6-2, pp 45-52, November 1997.
46. Sista, P., Swain, S., Chandrasekar, S. and Farris, T.N., "Tool Wear Characteristics of CBN Tools in the Finish Machining of Tool Steel," *Proc. IMECE Sym. on Predictable Modeling of Metal Cutting as Means of Bridging Gap Between Theory and Practice*, Dallas, TX, MED-Vol. 6-2, pp 161-168, November 1997.
47. Bulsara, V.H., Ahn, Y., Chandrasekar, S. and Farris, T.N., "Mechanics of Polishing," *Proc. IMECE Sym. on Quality of Traditionally and Nontraditionally Machined Surfaces: Modeling, Analysis and Measurement*, Dallas, TX, MED-Vol. 6-1, pp 225-233, November 1997.
48. Bulsara, V.H., Chandrasekar, S. and Farris, T.N., "Direct Observation of Contact Damage Produced by Vickers Indentation in Diamond-Like Films," *Proc. IMECE Sym. on Dissimilar Material Systems: Manufacturing Processes, Design, and Mechanics*, Dallas, TX, MD-Vol 80, pp 287-292, November 1997.
49. Szolwinski, M.P., Harish, G. and Farris, T.N., "The Role of Fretting Damage Mechanisms in the High Cycle Fatigue of Titanium Alloys," *Proc 3rd National High Cycle Fatigue (HCF) Conf, San Antonio*, Session 10, CD ROM, February 1998.
50. Sakagami, T., Szolwinski, M.P., Harish, G., and Farris, T.N., "Evaluation of the Stress Distribution Associated with Fretting Crack Nucleation Based on the Thermoelastic Temperature Measurement," *Proc. JSME Annual Meeting*, Tokyo, April 1998, In-Press, (in-Japanese).
51. Sakagami, T., Madhavan, V., Harish, G., Krishnamurthy, K., Ju, Y., Farris, T.N., and Chandrasekar, S., "Full-Field IR Measurement of Subsurface Grinding Temperatures," *Proc. Thermosense XX*, SPIE Vol. 3361, pp 234-245, Orlando, FL, April 1998. Also reprinted SPIE CD-ROM series, **7**, *Thermal Sensing and Imaging*, April 1999.
52. Harish, G. and Farris, T.N., "Effect of Fretting Contact Stresses on Crack Nucleation in Riveted Lapjoints," *Proc. 39th AIAA/ASME/ASCE/ASC Structures, Structural Dynamics, and Materials Conf.*, pp 383-391, Long Beach, CA, April 1998, (ASME/Boeing Structures and Materials Award for outstanding paper of SDM).
53. Bougher, J.A., Chandrasekar, S., Farris, T.N., and Mann, J.B., "Gross Part Deflection and Process Capability in the Hard Turning of Precision Mechanical Components," *Proc. CIRP Int. Workshop on Modeling of Machining Operations*, pp 337-346, Atlanta, GA, May 1998.

54. Farris, T.N., Harish, G., Szolwinski, M.P., and Sakagami, T., "Coupled Thermoelastic Stress Measurement Applied to Fretting," *Proc. SEM Spring Conf. on Experimental and Applied Mechanics*, pp 433-436, Houston, June 1998.
55. Sakagami, T., Szolwinski, M.P., Harish, G., and Farris, T.N., "Full-Field Subsurface Temperature Measurements in Fretting," *Proc. SEM Spring Conf. on Experimental and Applied Mechanics*, pp 437-440, Houston, June 1998.
56. Farris, T.N. and Chandrasekar, S., "Analysis of Contact Damage and Scratches in Glass," *Proc. 1st Int Symp on Impact and Friction of Solids, Structures and Intelligent Machines*, World Scientific, pp 13-16, Ottawa, June 1998.
57. Szolwinski, M.P., Harish, G., Farris, T.N., and Sakagami, T., "Evaluation of Fretting Stresses through Full-Field Temperature Measurements," *Proc. 1st Int Symp on Impact and Friction of Solids, Structures and Intelligent Machines*, World Scientific, pp 21-24, Ottawa, June 1998.
58. Sakagami, T., Ogura, K., Kubo, S., and Farris, T.N., "Application of Infrared Thermography for Contact Problems," *Proc. IUTAM Symp. on Advanced Optical Methods and Applications in Solid Mechanics, Poitiers, France, August 1998*, In-Press.
59. Rajeev, P.T., Farris, T.N., Chandrasekar, S., Andreski, B., Brada, G., "Heat Treatment of Steels: Prediction of Microstructure, Residual Stress and Distortion," *Heat Treating: Proceedings of the 18th Conference including the Liu Dia Memorial Symposium, ASM Heat Treating Society Conf.*, Rosemont, IL, October 1998, 467-475.
60. Szolwinski, M.P., Harish, G., and Farris, T.N., "The Development and Validation of Design-Oriented Metrics for Fretting Fatigue in Titanium Engine Components," *Proc. IMECE Sym. on Mechanical Behavior of Advanced Materials*, **MD 84**, pp 11-18, Anaheim, CA, November 1998.
61. Chang, S-H., Farris, T.N., and Chandrasekar, S., "Contact Mechanics of Superfinishing," *Proc. IMECE Sym. on Recent Advances in Materials Processing*, **MED-8**, pp 171-179, Anaheim, CA, November 1998.
62. Szolwinski, M.P. and Farris, T.N., "Linking Riveting Process Parameters to the Fatigue Performance of Riveted Aircraft Structures," *Proc. 40th AIAA/ASME/ASCE/ASC Structures, Structural Dynamics, and Materials Conf.*, CD, St Louis, MO, April 1999.
63. Harish, G. and Farris, T.N., "An Integrated Approach for Prediction of Fretting Crack Nucleation in Riveted Lap Joints," *Proc. 40th AIAA/ASME/ASCE/ASC Structures, Structural Dynamics, and Materials Conf.*, CD, St Louis, MO, April 1999.
64. McVeigh, P.A. and Farris, T.N., "Analysis of Surface Stresses and Stress Intensity Factors Present During Fretting Fatigue," *Proc. 40th AIAA/ASME/ASCE/ASC Structures, Structural Dynamics, and Materials Conf.*, v 2, pp 1188-1196, CD-ROM, St Louis, MO, April 1999.
65. Szolwinski, M.P., Tieche, C., Harish, G., Farris, T.N., Sakagami, T., and Heinstein, M., "Mechanics of Finite Width Fretting Contacts," *Proc. SEM Conf. on Theoretical, Experimental and Computational Mechanics*, pp 314-317, Cincinnati, June 1999.
66. Sakagami, T., Harish, G., Farris, T.N., and Szolwinski, M.P., "Observing and Modeling of Widespread Fatigue Damage in Riveted Aircraft Structures," *Proc. SEM Conf. on*

Theoretical, Experimental and Computational Mechanics, pp 686-689, Cincinnati, June 1999.

67. Harish, G., Farris, T.N., and Szolwinski, M.P., "Fretting Crack Nucleation in Riveted Lap Joints: Predictions and Experiments," *Proc. ICAF '99, Structural Integrity for the Next Millennium*, pp 1107-1115, Seattle, WA, July 1999.
68. Farris, T.N., Harish, G., Tieche, C, Sakagami, T., and Szolwinski, M.P., "Experimental Tools for Characterizing Fretting Contacts," *Proc. Int. Conf. on Advanced Technology in Experimental Mechanics*, pp 256-263, Ube, Japan, July 1999 (Keynote Lecture).
69. Farris, T.N., Harish, G., Szolwinski, M.P., and Sakagami, T., "Observing and Modeling Fretting Fatigue in Lap Joints," *Proc. JSME Annual Meeting*, paper #1026, pp 265-268, Tokyo, July 1999 (Invited Lecture).
70. Ju, Y., Farris, T.N., and Chandrasekar, S., "Effects of Grinding Conditions on Heat Partition and Temperatures in Grinding," *The Advancing Frontier of Engineering Tribology: Proc 1999 STLE/ASME H.S. Cheng Tribology Surveillance*, pp 90-95, Orlando, October 1999.
71. Akcan, S., Shah, S., Moylan, S.P., Chhabra, P.N., Chandrasekar, S. and Farris, T.N., "Characteristics of White Layers Formed in Steels by Machining," *ASME MED Vol. 10, Manufacturing Science and Engineering*, pp 789-795, Nashville, TN, November 1999.
72. Chang, S.H., Farris, T.N., and Chandrasekar, S., "Experimental Characterization of Superfinishing," *ASME MED Vol. 10, Manufacturing Science and Engineering*, pp 411-421, Nashville, TN, November 1999.
73. Harish, G., Farris, T.N., Wang, H., and Grandt, A.F., "Nucleation and Growth of Cracks in Lapjoints," *Proc. USAF Aircraft Structural Integrity Program*, 23 pages, San Antonio, TX, November-December 1999.
74. Farris, T.N., Harish, G., McVeigh, P.A., and Murthy, H., "Prediction and Observation of Fretting Fatigue of Ti-6Al-4V Subjected to Blade/Disk Type Contacts," *Proc of the 5th National Turbine Engine High Cycle Fatigue (HCF) Conference* on CD, Session 13, 11 pages, Chandler, AZ, March 2000.
75. Murthy, H., Harish, G. and Farris, T.N., "Influence of Contact Profile on Fretting Crack Nucleation in a Titanium Alloy," *Proc. 41st AIAA/ASME/ASCE/ASC Structures, Structural Dynamics, and Materials Conf.*, CD, Atlanta, GA, April 2000.
76. Slavik, D.C., McClain, R.D., Farris, T.N. and Murthy, H., "Fatigue Crack Initiation Modeling for Applications with Stress Gradients in Ti-6Al-4V," *Proc. of the 6th National Turbine Engine High Cycle Fatigue (HCF) Conf*, CD Presentation 1, Jacksonville, FL, March 2001.
77. Hartle, M.S., Farris, T.N., Matlik, J.F. and Rajeev, P.T., "A Hybrid Approach to 3D Edge of Contact Stress Analysis using Singular Integral Equations," *Proc of the 6th National Turbine Engine High Cycle Fatigue (HCF) Conference*, CD Presentation 42, Jacksonville, FL, March 2001. Farris, T.N., Murthy, H., Perez-Ruberte, E. and Rajeev, P.T., "Experimental Characterization of Fretting Fatigue of Engine Alloys," *Proc. of the 6th National Turbine Engine High Cycle Fatigue (HCF) Conf*, CD Presentation 19, Jacksonville, FL, March 2001.

79. Rajeev, P. T. and Farris, T. N., "Two Dimensional Contact of Dissimilar/Anisotropic Materials," in *Proceedings of 42nd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference*, **1**, pp 515-522, Seattle, WA, 2001.
80. Murthy, H., Farris, T.N., and Slavik, D.C. "Fretting Fatigue of Ti-6Al-4V Subjected to Blade/Disk Contact Loading," *Materials Science Research International Special Technical Publication 1---Materials Science for the 21st Century*, Conference on Materials Science for the 21st Century to celebrate the 50th Anniversary of Japan Society of Materials Science, Osaka, May 2001, pp 200-207.
81. Murthy, H., Rajeev, P.T. and Farris, T.N., "Fretting Fatigue in Turbine Engine Blade/Disk Contacts," *Proc. of the 13th PERC Symposium*, Huntsville, AL, October 2001, pp 330-338.
82. Dinesh, D., Swaminathan, S., Chandrasekar, S., and Farris, T.N., "An Intrinsic Size Effect in Machining due to Strain Gradient," *Proc. of ASME IMECE*, Nov 11-16, NY, NY, CD-ROM pp 1-8 (2001).
83. Calcaterra, J. and Farris, T.N., "Analysis of Turbine Engine Attachment Fatigue Using Integral Equation Methods," *Proc. USAF Aircraft Structural Integrity Program Conference*, Williamsburg, VA, December 2001.
84. Rajeev, P.T. and Farris, T.N., "Load History Effects in Fretting of Dissimilar Contacting Materials," in *Proceedings of 43rd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference*, Denver, CO, April 2002.
85. Murthy, H., Farris, T.N. and Okane, M. "Investigation of Fretting Characteristics of Turbine Materials at Higher Temperatures," in *Proceedings of 43rd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference*, Denver, CO, April 2002.
86. Farris, T.N., Murthy, H. and Matlik, J.F., "Fretting Fatigue of Contacts between Engine Alloys of Dissimilar Elastic Properties," *Proc of the 7th National Turbine Engine High Cycle Fatigue (HCF) Conference*, West Palm Beach, FL, May 2002.
87. Murthy, H., Rajeev, P.T. and Farris, T.N., "Fretting Fatigue of Ti6Al4V/Ti6Al4V and Ti6Al4V/In718 Subjected to Blade/Disk Contact Loading," *Fatigue 2002 The 8th International Fretting Fatigue Congress*, Stockholm, Sweden, Ed A.F. Blom, EMAS, Volume 3, pp 2153-2160, June 2002.
88. Rajeev, P.T., Murthy, H. and Farris, T.N., "Load History Effects on Fretting Contacts of Isotropic Materials," *Proc of ASME Turbo Expo 2002*, Amsterdam, June 2002, GT 2002-30297.
89. Farris, T.N., Murthy, H., Garcia, D.B., Matlik, J.F., "Fretting Fatigue of Single Crystal/Polycrystalline Nickel Subjected to Blade/Disk Contact Loading," *Proc. World Space Congress*, Houston, TX, IAC-02-I.1.08, October 2002.
90. Narayanan, V., Krishnamurthy, K., Hwang, J., Kompella, S., Chandrasekar, S., Farris, T.N., and Madhavan, V., "Measurement of Temperature Field at the Tool-Chip Interface," *Proc. Of NSF Workshop on Research Needs in Thermal Aspects of Material Removal Processes*, Ed R. Komanduri, Stillwater, OK, pp 63-69, June 2003.
91. Hwang, J., Kompella, S., Hanna, I., Chandrasekar, S. and Farris, T.N., "Analysis and Measurement of Grinding Temperatures," *Proc. Of NSF Workshop on Research Needs in*

Thermal Aspects of Material Removal Processes, Ed R. Komanduri, Stillwater, OK, pp 202-212, June 2003.

92. Murthy, H. and Farris, T.N., "Elevated Temperature Fretting of Turbine Materials Subjected to Engine Type Loading," in *Proceedings of 44th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference*, Norfolk, VA, April 2003.
93. Matlik, J.F. and Farris, T.N., "High Temperature, High Frequency Fretting Fatigue Investigations," AIAA 2003-1681 in *Proceedings of 44th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference*, Norfolk, VA, April 2003 [Outstanding Student Paper].
94. Farris, T.N., Murthy, H. and Matlik, J.F., "Fretting Fatigue of Contacts between Engine Alloys of Dissimilar Elastic Properties," *Proc of the 8th National Turbine Engine High Cycle Fatigue (HCF) Conference*, Monterey, CA, April 2003.
95. Widdle, Jr., R.D., Farris, T.N., Bajaj, A.K., Davies, P., "Modeling the contact stiffness between a 2D Voronoi Honeycomb and a Flat Rigid Surface," in *Mechanical Properties of Nanostructured Materials and Nanocomposites*, I. Ovid'ko, C.S. Pande, R. Krishnamoorti, E. Lavernia, G. Skandan, eds., Materials Research Society Symposium Proceedings, V. 791, 2004.
96. Matlik, J.F. and Farris, T.N., "Fretting of Single Crystal/Polycrystalline Nickel Contacts at Elevated Temperature and Frequency," AIAA 2004-1551 in *Proceedings of 45th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference*, Palm Springs, CA, April 2004.
97. Farris, T.N., Murthy, H. and Gao, G., "High-Temperature Fretting Fatigue," *Proc of the 9th National Turbine Engine High Cycle Fatigue (HCF) Conference*, Pinehurst, NC, April 2004.
98. Murthy, H. and Farris, T.N., "High Temperature Fretting Fatigue of Single Crystal Nickel," *Proc of the 10th National Turbine Engine High Cycle Fatigue (HCF) Conference*, New Orleans, LA, March 2005.
99. Gean, M. and Farris, T.N., "Finite Element Analysis of the Mechanics of Blade/Disk Contacts," AIAA 2005-1907 in *Proceedings of 46th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference*, Austin, TX, April 2005.
100. Kumari, S. and Farris, T.N., "Statistical Analysis of Effect of Surface Profile on Fretting Fatigue Life for Ti-6Al-4V," *Proceedings of 47th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference*, Newport, RI, May 2006.
101. Gean, M.C. and Farris, T.N., "Elevated Temperature Fretting Fatigue of Ti-17," *Proc of the 5th Int Sym on Fretting Fatigue*, Montreal, April 2007.
102. Sreeram, S., Garcia, D.B., Gean, M.C., Murthy, H., and Farris, T.N., "Fretting Fatigue Testing of Laser Shock Peened Ti-6Al-4V," *Proc of the 5th Int Sym on Fretting Fatigue*, Montreal, April 2007.
103. Kumari, S. and Farris, T.N., "Statistical Study of Ti-6Al-4V with Contact Surface Profile and Friction Variation," *Proc of the 5th Int Sym on Fretting Fatigue*, (Keynote Paper) Montreal, April 2007.

104. Sundaram, N. and Farris, T.N., "Mechanics of Doubly-Connected Contacts," *ASME Applied Mechanics and Materials Conference*, Austin, June 2007.
105. Gean, M.C and Farris, T.N., "Mechanics Modeling of Firtree Dovetail Contacts," *Proceedings of 49th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference*, Schaumburg, IL, April 2008.
106. Sundaram, N. and Farris. T.N., "Recent Progress in Numerical and Analytical 2D Contact Mechanics," Drucker Medalist Symposium, ASME International Mechanical Engineering Congress and Exposition, Boston, MA, May 2008.
107. Gean, M.C, Tate, N.J., and Farris, T.N., "Fretting Fatigue of Nickel Based Superalloys at Elevated Temperature," *Proceedings of 50th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference*, Palm Springs, CA, May 2009.

g. Publications in Commercial Magazines

1. Hucker, S.A., Mann, J.B., Farris, T.N., and Chandrasekar, S., "Thermal Aspects of Grinding with Superabrasives: Part I," *Abrasives Magazine*, Oct/Nov 1996, pp 24-27.
2. Hucker, S.A., Mann, J.B., Farris, T.N., and Chandrasekar, S., "Thermal Aspects of Grinding with Superabrasives: Part II," *Abrasives Magazine*, Dec 1996/Jan 1997, pp 5-7,28-30.
3. Hwang, J., Kompella, S., Chandrasekar, S., and Farris, T.N., "Direct Measurement of Workpiece Temperature Field in Surface Grinding," *Abrasives Magazine*, April/May 2002, pp 15-18.

h. Book Reviews

1. *Principles of Abrasive Machining*, MC Shaw, Reviewed by S. Chandrasekar and T.N. Farris, *Applied Mechanics Reviews*, **50**(12, Part 1), p B121, December 1997

Invited Presentations

1. "Contact Loading Fracture in Rails," Michigan State University, Department of Metallurgy, Mechanics and Materials Science, May 1987.
2. "The Body Force Method Applied to 3-Dimensional Crack Problems," Purdue Geomechanics Seminar, October 1988.
3. "Wave Propagation in Cracked Beams," Arizona State University, Department of Mechanical and Aerospace Engineering, February 1989.
4. "Cylindrical Cracking of Composites," Alcoa Technical Center, Pittsburgh, PA, November 1990.
5. "Some Mathematical Issues in Fracture," University of Maryland, Institute for Physical Science and Technology, February 1991.
6. "Ceramic Machining," Kyushu University, Fukuoka, Japan, June 1991.
7. "Applications of Fracture Mechanics in Ceramic Machining," Nagoya University, Nagoya, Japan, July 1991.
8. "Applications of Fracture Mechanics in Tribology," Meeting of Japan Society of Materials Science Fracture Mechanics subcommittee on Tribology, Kyoto, Japan, July 1991.

9. "Surface Finishing Processes for Ceramics," Nippon Steel, Chiba, Japan, August 1991.
10. "Surface Finishing Processes for Magnetic Recording Head Ceramics," Alps Electric Company, Niigata, Japan, August 1991.
11. "Mechanics of Fine Finishing Processes for Ceramics," Cambridge University Engineering Department, October 1991.
12. "A GLOBAL/LOCAL Approach to Wave Propagation in Cracked Beams," Oxford University Engineering Department, October 1991.
13. "Mechanics of Fine Finishing of Ceramics," Northwestern University Mechanics Colloquia, March 1992.
14. "Purdue Grinding Research," Norton Company, September 1993.
15. "The Nature of Ground Surfaces," Workshop on the Mechanics and Materials Science of Contact: Issues and Opportunities, Vanderbilt University, July 1994.
16. "Thermal Aspects of Grinding," Purdue University Materials Engineering Seminar, January 1995.
17. "Fretting Fatigue of Aging Aircraft," EUROMECH Fretting Symposium, Oxford, March 1996.
18. "Thermal Aspects of Grinding," University of Kentucky Mechanical Engineering Colloquium, May 1997.
19. "Manufacturing of Precision Mechanical Components: Global/Local Mechanics of Grinding," University of Texas Manufacturing 2002 Lecture Series, Feb 1998.
20. "Mechanics of Fretting Fatigue," University of Texas Solids, Structures and Materials Seminar, Feb 1998.
21. "Fretting Fatigue of Aerospace Structures," United Technologies Research Center, April 1999.
22. "Experimental Tools for Characterizing Fretting Contacts," Keynote Lecture at Int. Conf. on Advanced Technology in Experimental Mechanics, Ube, Japan, July 1999.
23. "Observing and Modeling Fretting Fatigue in Lap Joints," Invited paper at JSME Annual Meeting, Tokyo, July 1999.
24. "Fretting Fatigue of Aerospace Structures," Osaka University, July 1999.
25. "Fretting Fatigue of Aerospace Structures," Georgia Tech, April 2000.
26. "Temperature Measurements in Fretting," Toyama University, May 2001.
27. "Fretting Fatigue of Aircraft Engines," University of Michigan, November 2001.
28. "Heat Partition and Temperatures in Grinding," Michigan Tech, December 2001.
29. "Mechanics of Fretting Fatigue," Oxford University Engineering Department, January 2003.
30. "Fretting Fatigue of Lapjoints," National Research Council, Ottawa, Canada, July 2003.
31. "Fretting Fatigue of Aerospace Structures," University of Florida, October 2003.

32. "Fretting Fatigue," GE GRC Advanced Mechanical Technologies Seminar Series, Albany, NY, June 2004.
33. "Fretting Fatigue of Aerospace Structures," Northwestern University, January 2005
34. "Fretting Fatigue of Aerospace Structures," University of Illinois, February 2005.
35. "Fretting Fatigue of Aerospace Structures," Korean Advanced Institute of Science and Technology, Seoul, December 2005
36. "Fretting Fatigue of Aerospace Structures," Rice University, February 2006.
37. "Fretting Fatigue of Aerospace Structures," Iowa State University, March 2007.
38. "Fretting Fatigue of Aerospace Structures," Texas A&M, April 2009.
39. "Fretting Fatigue of Aerospace Structures," Central Florida University, September 2010.
40. "Fretting Fatigue of Aerospace Structures," Clarkson University, March 2011.
41. "Tribology," Basketball Traction Workshop, adidas, Portland, Oregon.

Reviewer for the following journals:

Acta Materialia; AIAA Journal; AIAA Journal of Aircraft; AIAA Journal of Propulsion and Power; ASCE Journal of Engineering Mechanics; ASME Advances in Information Storage Systems; ASME Journal of Applied Mechanics; ASME Journal of Engineering Materials and Technology; ASME Journal of Manufacturing Science and Engineering; ASME Journal of Tribology; ASTM Special Technical Publication; Composites Science and Technology; Engineering Analysis with Boundary Elements; Engineering Fracture Mechanics; International Journal of Fracture; International Journal of Modeling and Simulation; International Journal for Numerical Methods in Engineering; International Journal of Solids and Structures; Journal of Elasticity; Journal of Machining Science and Technology; Journal of Sound and Vibration; Journal of the American Ceramic Society; Journal of the Mechanics and Physics of Solids; Mathematics & Mechanics of Solids; SEM Experimental Mechanics; STLE Tribology Transactions; Structural Engineering and Mechanics; and Wear.