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IBRAHIM N. TANSEL

Mechanical Eng. Dept.
Florida International Univ.
Tel: (305) 348-3304

U.S. Citizen
Born in 1956
Married-two children

CAREER RELATED EXPERIENCE

PROFESSOR (1990-present, tenured and promoted to Assoc. Prof. in 1994, promoted to Prof. 2007), Florida International University, University Park, Miami, FL.

DEPARTMENT CHAIR (2014-2017), Mechanical and Materials Eng., Florida International University, University Park, Miami, FL.

ASSISTANT PROFESSOR, (1986-1990) Tufts University, Medford MA.

HONORS

FELLOW, American Society of Mechanical Engineers, 2008.

OUTSTANDING YOUNG MANUFACTURING ENGINEER AWARD, Society of Manufacturing Engineering, 1992.

FACULTY RESEARCH AWARD, 2003; **TEACHING AWARD**, 1998; **FACULTY RESEARCH AWARD**, 1993, Florida International University.

FELLOWSHIP POSITIONS AFTER HIGHLY COMPETITIVE REVIEW PROCESSES MANAGED BY NRC AND ASEE, (12 times)

- NAVY, ASEE, 2000, 2001, 2010, 2011
- Eglin AFB, ASEE, 2008, 2012, 2013
- NASA, ASEE, 2004, 2005
- Wright Patterson AFB, NRC, 2001, 2002, 2003,2006

KAUFFMAN PROFESSOR, Florida International University, 2007.
ASSOCIATE EDITOR, IASTED International Journal on Modelling and Simulation, 1999-present.
REVIEW COMMITTEE MEMBER, International Journal of Machine Tools and Manufacture, 1992-2017.
TEACHING INCENTIVE PROGRAM AWARD, Florida International University-Florida State, 1996
LISTED IN the 2nd edition of MARQUIS WHO'S WHO IN SCIENCE AND ENGINEERING

EDUCATION

Ph.D: UNIVERSITY OF WISCONSIN, MADISON - May 1986
Major: Mechanical Engineering, Minor: Electrical Engineering
M.S.: ISTANBUL TECHNICAL UNIVERSITY, TURKEY - March 1980
Major: Mechanical Engineering

B.S.: ISTANBUL TECHNICAL UNIVERSITY, TURKEY - May 1978
Major: Mechanical Engineering

TEACHING EXPERIENCE

In Florida International University:
Data Science including Neural Networks and Deep Learning in Mechanical Engineering, Data Science from Digitization to Automated Decision Making in Mechanical Engineering 1, Data Science from Digitization to Automated Decision Making in Mechanical Engineering 2, Smart Machine Design and Development, Introduction to Mechatronics, Design Production and Marketing, Market Oriented Design and Production, Automatic Control, Identification of Mechanical Engineering Systems, Sensors and Machine Intelligence, Instrumentation, System Dynamics, Computer Aided Design, Advanced CAD/CAM, Kinematics and Mechanical Design, Statics, Dynamics

In Tufts University:
Computer Aided Manufacturing, Modern Quality Control, Computer Applications for Control and On-Line Monitoring, Control of Mechanical Engineering Systems, Material Science, Dynamics and Vibrations, Mechanical Engineering Laboratory, Modern Machine Practice, Image Processing Laboratory (partly), Project Laboratory,

PATENTS

I.N. Tansel, "Continuous granular material laying by using temporary storage bins" US Patent # US 11,788,239 B1, Date: Oct. 17, 2023.

I. N. Tansel, V. Y. Senyurek, M. Unal, A. Baghalian, S. Tashakori, "Implementation of Heterodyne Effect in SHM and Talking SHM Systems, " US Patent # 10, 191, 013 B2, Date: Jan 29, 2019.
https://www.youtube.com/watch?v=0M1rGJ3jMIw

PUBLICATIONS

Book:

Srikanth Korla and Ibrahim Tansel, Role of Piezoelectric Elements for Wear Monitoring in Cutting Tools: Characterization of Piezoelectric Actuators, Wear Classification by Surface Waves/Frequency Response Techniques, LAP LAMBERT Academic Publishing (February 2, 2012). ISBN-10: 3847315994, ISBN-13: 978-3847315995

Book Chapter:

1. I.N. Tansel, M. Demetgul and R.L. Sierakowski, "**Determining initial design parameters by using genetically optimized neural network systems (GONNS),"**

Composite Materials Technology: Neural Network Applications, Editor S.M. Sapuan, CRC Press, USA in 2009.

2. A. Yenilmez, I.N. Tansel, "**Manufacturing Automation, Polymer Composites**," Encyclopedia of Composites, 2nd Edition, Editors: Luigi Nicolais, Assunta Borzacchiello, publisher John Wiley &Sons, Hoboken, New Jersey, 2012, ISBN (printed set): 978-0-470-12828-2

3. Mustafa Demetgul, Sezai Taskin, and Ibrahim Nur Tansel, "**Conditioning Monitoring and Fault Diagnosis for a Servo-Pneumatic System with Artificial Neural Network Algorithms**," Artificial Neural Networks - Industrial and Control Engineering Applications, Edited by Kenji Suzuki, April 2011. (http://www.intechopen.com/source/pdfs/14747/InTech-Conditioning_monitoring_and_fault_diagnosis_for_a_servo_pneumatic_system_with_artificial_neural_network_algorithms.pdf), also published as hard copy ISBN 978-953-307-220-3. (Downloaded 8,944 times from the Intechopen site as of 5/29/2017)

Published or Accepted Journal Papers:

1. R. Byfield, I. Tansel, "**Load magnitude and location estimation on additively manufactured circular structures using deep learning**," Next Materials, Volume 6, 2025, pp. 100282, https://doi.org/10.1016/j.nxmate.2024.100282.
2. M. Demetgul, W. Wang, J. Fleischer, I.N. Tansel, "**AI-based inspection of the axes of machine tools,**" Int J Adv Manufacturing Technology Vol. 130, No 5, 2024. Pp. 2329-42. https://doi.org/10.1007/s00170-023-12830-y
3. R. Byfield, G. Semroud, M. Laurent, I. Tansel, "**Structural Condition Monitoring Using Deep Learning on a Metallic Part Fabricated by Additive Manufacturing**," Digital Manufacturing Technology 2023, vol. 3, no 2pp. 190–213. https://doi.org/10.37256/dmt.3220233366
4. M. Demetgul, Q. Zheng, I.N. Tansel, J. Fleischer, "**Monitoring the misalignment of machine tools with autoencoders after they are trained with transfer learning data**," Int J Adv Manufacturing Technology 2023, 19 August. https://doi.org/10.1007/s00170-023-12060-2
5. A. Modir, A. Casterman, I. Tansel, "**Detection of Anomalies in Additively Manufactured Metal Parts Using CNN and LSTM Networks,**" Recent Progress in Materials 2023; vol. 5, no 3, 2023, https://doi.org/10.21926/rpm.2303028
6. Alireza Modir, Ibrahim Tansel, "**Structural Health Monitoring of Additively Manufactured Parts by Combining Infill Design, Multiple Pulse Width Excitation (MPWE), and Deep Learning**," J. Vib. Eng. Technol. Vol.10, 2022, pp.3227–3238, https://doi.org/10.1007/s42417-022-00553-5.
7. Alireza Modir, Ibrahim Tansel., "**Analysis of Force Sensing Accuracy by Using SHM Methods on Conventionally Manufactured and Additively Manufactured Small Polymer Parts**" Polymers, vol. 14, no. 18, 2022, pp: 3755. https://doi.org/10.3390/polym14183755
8. Alireza Modir,, and Ibrahim Tansel., "**Wave Propagation and Structural Health Monitoring Application on Parts Fabricated by Additive**

Manufacturing" Automation, vol. 2, no. 3, 2021, pp: 173-186. https://doi.org/10.3390/automation2030011

9. Alireza Modir and Ibrahim Tansel, **"Implementation of the surface thickness on additively manufactured parts for estimation of the loading location**," Smart Materials and Structures, Vol. 30, Number 2, 2021, 9 pages, https://doi.org/10.1088/1361-665X/abd4b1
10. Shervin Tashakori, Saman Farhangdoust, Amin Baghalian, Dwayne McDaniel, Ibrahim N. Tansel and Armin Mehrabi, "**Damage detection of 3D printed mold using the surface response to excitation method**," Structural Engineering and Mechanics, Volume 75, Number 3, 2020, pp. 369-376, DOI: http://dx.doi.org/10.12989/sem.2020.75.3.369
11. Amin Baghalian, Shervin Tashakori, Volkan Y. Senyurek, Muhammet Unal, Dwayne McDaniel, Ibrahim N. Tansel, "**Development of comprehensive heterodyne effect based inspection (CHEBI) method for inclusive monitoring of cracks,**" Measurement, Vol. 128, 2018, Pages 89-95,ISSN 0263-2241, https://doi.org/10.1016/j.measurement.2018.06.030.
12. Shervin Tashakori, Amin Baghalian, Volkan Y. Senyurek, Saman Farhangdoust, Dwayne McDaniel, and Ibrahim N. Tansel, "**Composites Bond Inspection Using Heterodyne Effect and SuRE Methods**," Shock and Vibration, Volume 2018, Article ID 1361932, 6 pages, (file:///C:/Users/tanse/Downloads/1361932.pdf), https://doi.org/10.1155/2018/1361932
13. S. Tashakori, A. Baghalian, V. Y. Senyurek, Muhammet Unal, D. McDaniel, I. N. Tansel, "**Implementation of heterodyning effect for monitoring the health of adhesively bonded and fastened composite joints**," Applied Ocean Research, Vol. 72, 2018, pp. 51–59, https://doi.org/10.1016/j.apor.2018.01.008.
14. V. Y. Senyurek, A. Baghalian, S. Tashakori, D. McDaniel, I. N. Tansel, "**Localization of multiple defects using the compact phased array (CPA) method**," Journal of Sound and Vibration, Vol. 413, 20 January 2018, pp 383-394. https://doi.org/10.1016/j.jsv.2017.10.037
15. A.Baghalian, V. Y.Senyurek, S.Tashakori, D.McDaniel, I. N. Tansel "**A Novel Nonlinear Acoustic Health Monitoring Approach for Detecting Loose Bolts**," Journal of Nondestructive Evaluation, Vol. 37, No.24, 2018, https://doi.org/10.1007/s10921-018-0478-0
16. A. Baghalian, S. Tashakori, V. Y. Senyurek, Muhammet Unal, D. McDaniel, H. Fekrmandi, I. N. Tansel, "**Non-Contact Quantification of Longitudinal and Circumferential Defects in Pipes using the Surface Response to Excitation (SuRE) Method**," International Journal of Prognostics and Health Management, Vol.8, Issue 2, pp.1220, 2017.
17. B. Tansel, N. Dizge, Ibrahim N. Tansel, "**Analysis of high resolution flux data to characterize fouling profiles of membranes with different MWCO under different filtration modes**," Separation and Purification Technology, Vol.173, 2017, pp.200-208, http://dx.doi.org/10.1016/j.seppur.2016.09.032
18. H. Fekrmandi, M. Unal, SR Neva, I.N. Tansel, D. McDaniel, "**A novel approach for classification of loads on plate structures using artificial neural**

networks," Measurement, Vol. 82, 2016, pp. 37-45. http://dx.doi.org/10.1016/j.measurement.2015.12.027

19. Shervin Tashakori, Amin Baghalian, Muhammet Unal, Hadi Fekrmandi, Volkan y Senyürek, Dwayne McDaniel, Ibrahim N. Tansel, "**Contact and non-contact approaches in load monitoring applications using surface response to excitation method**," Measurement, Vol. 89, 2016, pp. 197-203. http://dx.doi.org/10.1016/j.measurement.2016.04.013
20. Hadi Fekrmandi, Muhammet Unal, Amin Baghalian, Shervin Tashakori, Kathleen Oyola, Abdullah Alsenawi, "**A non-contact method for part-based process performance monitoring in end milling operations**", International Journal of Advanced Manufacturing Technology, Vol. 83, Issue 1–4, pp 13–20, 2016. DOI 10.1007/s00170-015-7523-2
21. M. Demetgul, V.Y. Senyurek, R Uyandik, I.N. Tansel, O. Yazicioglu, "**Evaluation of the health of riveted joints with active and passive structural health monitoring techniques**," Measurement, Vol. 69, 2015, pp. 42-51. doi:10.1016/j.measurement.2015.03.032
22. Hadi Fekrmandi, Javier Rojas, Ibrahim N. Tansel, Ahmet Yapici, Balemir Uragun, "**Investigation of the computational efficiency and validity of the surface response to excitation method**," Measurement, Volume 62, February 2015, pp 33–40. doi:10.1016/j.measurement.2014.10.053
23. Hadi Fekrmandi, Javier Rojas, Jason Campbell, Ibrahim Nur Tansel, Bulent Kaya, Sezai Taskin, "**Inspection of the Integrity of a Multi-Bolt Robotic Arm Using a Scanning Laser Vibrometer and Implementing the Surface Response to Excitation Method (SuRE)**," International Journal of Prognostics and Health Management, Vol. 5, 2014, http://www.phmsociety.org/sites/phmsociety.org/files/phm_submission/2013/ijphm_14_001.pdf
24. M. Demetgul, K. Yildiz, S. Taskin, I.N. Tansel, O. Yazicioglu, "**Fault Diagnosis on Material Handling System using Feature Selection and Data Mining Techniques**," Measurement, Vol. 55, 2014, pp. 15-24. http://dx.doi.org/10.1016/j.measurement.2014.04.037
25. Ömer Erkan, Mustafa Demetgül, Birhan Isik, Ibrahim Nur Tansel, "**Selection of optimal machining conditions for the composite materials by using Taguchi and GONNs**," Measurement, Vol. 48, 2014, pp. 306–313. doi:10.1016/j.measurement.2013.11.011
26. Ibrahim N. Tansel, Ahmet Yapici, "**Part Based Process Performance Monitoring (PbPPM)**," Journal of Manufacturing Processes, Volume 15, Issue 3, August 2013, pp 329–337, http://dx.doi.org/10.1016/j.jmapro.2013.02.002
27. I.N. Tansel, B. Reding, W. L. Cooper, "**Lagrangian Point State Estimation with Optimized, Redundant Induction Coil Gages**," Experimental Mechanics, Volume 53, Issue 6 , 2013, pp 1065-1072, DOI 10.1007/s11340-013-9714-9.
28. I. N. Tansel, M. Li, K. Bickraj , M. Demetgul, B. Kaya, B. Ozcelik, " **Detecting chatter and estimating wear from the torque of end milling signals by using Index Based Reasoner (IBR)**" The International Journal of Advanced Manufacturing Technology, Volume 58, Numbers 1-4, 2012, pp.109-118, DOI: 10.1007/s00170-010-2838-5

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30. Ibrahim N. Tansel, Benjamin L. Grisso, Gurjiwan Singh, Gurjashan Singh, Srikanth Korla, Ramon Duran, Liming W. Salvino, "**Wear Estimation by Testing the Elastic Behavior of Tool Surface**," International Journal of Machine Tools and Manufacture Volume 51, Issues 10-11, 2011, pp. 745-752
31. I.N.Tansel, M. Demetgul, K. Bickraj , B. Kaya, B. Ozcelik, "**Basic Computational Tools and Mechanical Hardware for Torque-Based Diagnostic of Machining Operations**," Journal of Intelligent Manufacturing, Volume 24, Issue 1, pp 147-161, DOI: 10.1007/s10845-011-0550-4.
32. Babur Ozcelik, Emel Kuram, Erhan Demirbas, Emrah Sik, Ibrahim Tansel, "**Evaluation of New Vegetable Based Cutting Fluids on Thrust Force and Surface Roughness in Drilling of AISI 304 using Taguchi Method**," Materials and Manufacturing Processes, Vol.26, 2011, pp.1136-1146.
33. S. Korla, R.A. Leon, I.N. Tansel, A. Yenilmez, A. Yapici, and M. Demetgul, "**Design and testing of an efficient and compact piezoelectric energy harvester**" Microelectronics Journal, Vol. 42 No. 2, 2011, pp.265-270.
34. I. N. Tansel, S.Gülmez, M. Demetgul, Ş.Aykut, "**Taguchi Method - GONNS Integration: Complete procedure covering from experimental design to complex optimization**" Expert Systems with Applications, Vol.38, No.5, 2011, pp.4780-4789.
35. I.N. Tansel, Mustafa Demetgul, Hasan Okuyucu, A. Yapici, "**Optimizations of Friction Stir Welding of Aluminum Alloy by Using Genetically Optimized Neural Network,**" International Journal of Advanced Manufacturing Technology, Volume 48, Numbers 1-4, 2010, pp.95-101.
36. Ş.Aykut, M. Demetgul, I.N. Tansel, "**Selection of optimum cutting condition of cobalt based super alloy with GONNS,**" International Journal of Advanced Manufacturing Technology, Volume 46, Numbers 9-12, 2010, pp.957-967.
37. I.N. Tansel, M. Demetgul, R.A. Leon, A. Yenilmez, A. Yapici, "**Design of Energy Scavengers of Structural Health Monitoring Systems by Using GONNS,**" Sensors and Materials, Vol.21, No.3, 2009, pp.141-153.
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39. X. Wang, I.N. Tansel, "**Modeling Progress of Lamb Waves by using Genetic Algorithm and S-Transformation,"** Structural Health Monitoring, Vol.6, No.1, 2007, pp.25-37.
40. I.N. Tansel, F. Inanc, N. Reen, P. Chen, X. Wang, C. Kropas-Hughes, A. Yenilmez, Journal of Nondestructive Evaluation "**Neural Network Based Thickness Estimation from Multiple Radiographic Images**,", Vol. 25, No. 2, 2006, pp.53-66.
41. A. Yenilmez, D. Rincon, I.N. Tansel, F.I. Erazo, X. Wang, and P. Chen, International Journal of Advanced Manufacturing Technology, "**Estimation of the Chatter Zones of Drilled Holes by Using S-Transformation**," Vol.31, No. 7-8, 2007, pp.638-644.

42. X. Wang, P. Chen, I.N. Tansel, A. Yenilmez, "**Transformations in Machining - 1 - Enhancement of Wavelet Transformation Neural Network (WT-NN) Combination with a Preprocessor**," Int. Jour. of Mach. Tools and Manufacturing, Volume 46, Issue 1, January 2006, pp 36-42.

43. X. Wang, P. Chen, I.N. Tansel, A. Yenilmez, B. Ozcelik, Int. Jour. of Mach. Tools and Manufacturing, "**Transformations in Machining - 2 - Evaluation of Machining Quality and Detection of Chatter in Turning by using S-Transformation**," Volume 46, Issue 1, January 2006, pp 43-50.

44. I.N. Tansel, B. Ozcelik, W.Y. Bao, P. Chen, D. Rincon, S.Y. Yang, A. Yenilmez, Int. Jour. of Mach. Tools and Manufacturing, "**Selection of Optimal Cutting Conditions by Using GONNS, "** Volume 46, Issue 1, January 2006, pp 26-35.

45. I.N. Tansel, W.Y. Bao, N. S. Reen, C.V Kropas-Hughes, Int. Jour. of Mach. Tools and Manufacturing, "**Genetic Tool Monitor (GTM) for Micro-End-Milling Operations**," Vol.45, No.3, 2005, pp.293-299.

46. S.Y. Yang, V. Girivasan, N. R. Singh, I.N. Tansel, C.V Kropas-Hughes, Int. Jour. of Mach. Tools and Manufacturing, "**Selection of Optimal Material and Operating Conditions in Composite Manufacturing – II – Complexity, Representation of Characteristics and Decision Making**," Vol.43, No.2, 2003, pp.175-184.

47. S.Y. Yang, I.N. Tansel, C.V Kropas-Hughes, Int. Jour. of Mach. Tools and Manufacturing, "**Selection of Optimal Material and Operating Conditions in Composite Manufacturing – I – Computational Tool**," Vol.43, No.2, 2003, pp.169-173.

48. I. N. Tansel, M. E. Trujillo, W.Y. Bao, T. T. Arkan, Int. Journal of Modelling and Simulation, "**Acoustic Emission Based Tool Breakage Detector (TBD) for Micro-end-Milling Operations,**" Vol.21, No.1, 2001, pp.10

49. B. Tansel, W.Y. Bao, I.N. Tansel, Desalination, **"Characterization of Fouling Kinetics in Ultrafiltration Systems by Resistances in Series Model,"** Vol. 129, No. 1, 2000, pp.7-14.

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51. W.Y. Bao, I.N. Tansel, Int. Jour. of Mach. Tools and Manufacturing, **"Modeling Micro-End-Milling Operations--II: Tool Run-out,"** Vol.40, No.15, 2000, pp.2175-2192. (Cited over 190 times as of 8/4/2020 according to Google Scholar)

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2000, pp.599-608. (Cited over 190 times as of 8/4/2020 according to Google Scholar)

55. I.N. Tansel, W.Y. Bao, T.T. Arkan, B. Tansel, Housing Science, "**Assessing Underground Contamination Concentration Profiles by Using Neural Networks,"** Vol.23, No.1, 1999, pp.11-18.

56. B.Tansel, C. Jordahl, I.N. Tansel, Journal of Civil Engineering and Environmental Systems, "**Mapping of Subsurface Contaminant Profiles by Neural Networks,**" Vol.16, 1999, pp.37-50.

57. I.N. Tansel, Key Engineering Materials, "**Monitoring micro-drilling operations using neural networks**," v 138-140 1998. p 575-592.

58. B. Tansel, B. Reyes-Osorno**,** I.N. Tansel, The Journal of Solid Waste Tecnology and Management, **"Comparative Analysis of Fluorescent Lamp Recycling and Disposal Options**," Vol.23, No.2, 1998, pp.82-88.

59. I. N. Tansel, M. Trujillo, A. Nedbouyan, C. Velez, Wei-Yu Bao, T.T. Arkan, B. Tansel, Int. Jour. of Mach. Tools and Manufacturing, "**Micro-End-Milling-III. Wear Estimation and Tool Breakage Detection using Acoustic Emission Signals**," Vol.38, No.12, 1998, pp.1449-1466.

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63. I.N.Tansel, M. Trujillo, W.Y. Bao, T. Arkan, Cutting Tool Engineering, **"Detecting Microtool Failures,"** Vol.49, No.6, Sept, 1997, pp.54-62, 1997.

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T. C. Yih, I. N. Tansel, K. H.Wu, **Research Experience for Undergraduates in Robotics and Materials**, WL-TR-93-8021, March 1993,

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1. I.N. Tansel, "**Energy Harvesting from Ambient Vibration and Ocean Waves,"** Knovel, http://engineeringcases.knovelblogs.com/2011/01/03/energy-harvesting-from-ambient-vibration-and-ocean-waves/ January, 3rd,2001.

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2. S. Tosunoglu, T.C. Yih, I.N. Tansel, **Proceedings of the 1997 Florida Conference on Recent Advances in Robotics** 1997.
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"**Development of a Multipurpose quadcopter**", NASA – Florida Space Grant Consortium, University of Central Florida, 2014 for 1 year, $500

"**Development of a Micro Satellite**", NASA – Florida Space Grant Consortium, University of Central Florida, 2014 for 1 year, $1,000

"**Remote Ophthalmology Robotic Device Prototype,**" Sabri Tosunoglu (PI), Ibrahim Tansel (Co-PI), TYB LLC, February 1, 2015, for 1 year, $50,815.

"**Florida International University (FIU)-AFRL/RW Collaboration,"** Ibrahim Tansel, Sabri Tosunoglu, Eglin AFB, 2014, for 1 year, $75,000.

"**Summer Faculty Fellowship Program**," Eglin AFB, July- August 2013, (over $15,000 for salary and expenses)

"**Summer Faculty Fellowship Program**," Eglin AFB, July- August 2012, (over $20,000 for salary, expenses and one student support)

"**Support for the Mechanical Engineering Senior Design Projects,"** Sabri Tosunoglu, Ibrahim Tansel, 2011, Eglin AFB, for 2 years, $50,000.

"**Aerobota,"** NASA – Florida Space Grant Consortium, University of Central Florida, 2011 for 1 year, $3,000.

"**Summer Faculty Research Program**," Structures and Composite (Code 652), Carderock Division, NSWC, July- August 2011, (over $20,000 for salary and expenses)

"**Aerobota,"** NASA – Florida Space Grant Consortium, University of Central Florida, ,2010 for 1 year, $1,500

"**Enhancement of Mechatronics Education**," FIU, 2010 for 1 year, 17,600

"**Summer Faculty Research Program**," Structures and Composite (Code 652), Carderock Division, NSWC, July- August 2010, (over $20,000 for salary and expenses)

"**Degradation of Signal Quality of Structural Health Monitoring Systems with Time**," I.N. Tansel, Berrin Tansel, GDIT (WPAFB), November 2008, for 16 months $115,170.

"**Air Force/Summer Faculty Fellowship**," Eglin AFB, Eglin, FL, May-August 2008 (over $20,000 for salary)

"**Introduction of Entrepreneurship Skills to Mechanical Engineering Students**," Kauffman Professorship, February 2007, for 1 year, $15,000.

"**Modification of the Flight Characteristics by Considering Structural Integrity**," I.N. Tansel, GDIT (WPAFB), August 2007, for 12 months $47,000.

"**Development of Small Energy Scavenger (SES)**," I.N. Tansel, ARMY, TACOM-ARDEC, PC3 Group G, BAA No. W15QKN-04-R-0707, September 2005, for 27 months, $100,000

"**Preliminary Study for Development of Structural Health Conscious Autonomous Guidance and Control System**," D. Rincon, I.N. Tansel, WPAFB, August 2005, for 18 months $150,000.

"Vehicle Health Monitoring – Software development and testing," I.N. Tansel, Iowa State University, 100K, for 24 months, 2003.

"**Summer Faculty Research Program**," Kennedy Space Center, NASA, May-August 2005, ASEE (over $12,000 for salary)

"**Summer Faculty Research Program**," Kennedy Space Center, NASA, May-August 2004, ASEE (over $12,000 for salary)

"**Active Vibration Control of Manufacturing Processes",** D. Rincon, I.N. Tansel, Sikorsky Aircraft Corporation, $90,000, 2002 (18 months).

"**Identification of hot spots and most suitable structural health monitoring techniques for landing gears**," I.N. Tansel, D. Rincon, Universal Technology Corporation ($15,000), 2003, (2 months)

"**Summer Faculty Research Program**," Naval Air Warfare Center, Aircraft Division (NAWCAD), July- August 2000, Naval Air Warfare Center, Training Systems Division (NAWCTSD), April- June 2001, ASEE (over $16,000, and over $16,000 for salary)

"**Air Force/Summer Faculty Fellowship**," Wright Patterson AFB, Dayton, OH, July-August 2001, May-August 2002, 2003, 2006 (over $10,000 first year, over $20,000 at the feature visits for salary)

"Development of Hidden Corrosion Detection by Dual-Energy X-Ray," I.N. Tansel, Universal Technology Corporation ($19,900), 2002, (Duration 6 months)

"Enhancement of the Complexity Estimation Tool- Phase I," I.N. Tansel, Motorola, ($4,900), 2002, (Duration 3 months)

"Support of Mentor-Protege Program between TRW and Frontier Electronics," K. Jones, I.N. Tansel, TRW, (34,000), 1999, (Duration 1 year)

"Motorola-FIU Collaboration-III," I.N. Tansel, Motorola, ($12,500), 1999, (Duration 4 months)

" **Development of a Composite Material Selection Advisor (CoMSA) by using Genetic Algorithms and Neural Networks,**" I.N. Tansel, Wright Patterson AFB, ($130,000), 1999, (Duration 3 years).

"**U.S. Egypt Cooperative Research: Building a CNC Machining System with an Open Architecture Controller**", I.N. Tansel, National Science Foundation, ($24,000), 1998, (Duration 2 years).

"Machinability for the Materials Prepared by Using Three-Dimensional Printing," I.N. Tansel, Motorola, ($17,500), 1998, (Duration 1 year)

"Motorola-FIU Collaboration-II," I.N. Tansel, Motorola, ($15,000), 1998, (Duration 4 months)

"Motorola-FIU Collaboration," I.N. Tansel, Motorola, ($8,450), 1997, (Duration 4 months)

"Design and Manufacture of Automated Cutting Mechanism," L.E.R. enterprises, ($10,000), 1996, (Duration 1 year).

"**Using Trainable Neural Networks for the Three-Dimensional Characterization of Subsurface Contamination**", I.N. Tansel, EPA-NHSRC, ($54,000), 1995, (Duration 1 year).

"**Development of a Rapid Manufacturing System**", F. Chen, I.N. Tansel, ARPA (373,454), 1995.

"**Enhancement of Mechanical Engineering Curriculum with Signal Processing Applications**", I.N. Tansel, C. Levy, NSF (33,000), 1995.

"**Neural Network Based Machine Diagnostic**", C. Levy, I.N. Tansel, M. El-Said, K.H. Wu, DME Corporation, ($30,000), 1993, (Duration 1 year).

"**Development of Intelligent Gear Inspection System**", I.N. Tansel, A. Arch, National Science Foundation, ($25,000), 1992, (Duration 15 months).

"**Research Experience for Undergraduates in Robotics and Manufacturing**", T.C. Yih, I.N. Tansel, K. Wu, Wright Patterson Air Force Base, ($92,000), 1991.

"**Attendance of one student to Sixth National Conference on Undergraduate Research**", NSF, ($500),1992.

"**Development of High Temperature Two-Way Shape Memory Alloys**", K. Wu, K. Jones, I.N. Tansel, U.S. Army, ($320,000), 1991

"**Attendance to Airplane Design Seminar**", I.N. Tansel, National Science Foundation, ($1,000), 1991.

"**Grant Proposal,** S.M. Lee, J.G. Chow, I.N. Tansel, Society of manufacturing Engineers Manufacturing Engineering Education Foundation, (384,245 in-kind), 1997.

"**Grant Proposal**", C. Chen, I.N. Tansel, S.Lee, Society of manufacturing Engineers Manufacturing Engineering Education Foundation, (14,380 in-kind), 1991.

"**Grant Proposal**", I.N. Tansel, A. Saigal, Society of manufacturing Engineers Manufacturing Engineering Education Foundation, (5,250 in-kind), 1990.

"**Grant Proposal**", I.N. Tansel, A. Saigal, Society of manufacturing Engineers Manufacturing Engineering Education Foundation, (23,100 in-kind), 1989.

"**Grant Proposal**", A. Saigal, I.N. Tansel, Society of manufacturing Engineers Manufacturing Engineering Education Foundation, (11,650 in-kind), 1988.

"**Grant Proposal**", A. Saigal, I.N. Tansel, Society of manufacturing Engineers Manufacturing Engineering Education Foundation, (52,095 in-kind), 1987.

"**Development of an Intelligent Tool Monitoring System for Machine Tools**", FIU Foundation, ($12,314), 1991.
"**Development of an Intelligent Manufacturing Cell**", I.N. Tansel, General Electric Corporation (provided industrial robot, worth over $61,000), 1987.
"**Modern Quality Control with Industrial Applications**", College of Engineering of Tufts University, Development of an applied course for AT&T engineers, and Tufts students, (total $120,000 package), 1989
"**Energy Related Laboratory Equipment**", I.N. Tansel, E. Bigzadeh, Department of Energy, (over $800,000 face value), 1990, 1991.
"**Summer Faculty Fellowship**", Tufts University ($4000), 1988.

SUPERVISED POST-DOCS

1. Dr. Volkan Yusuf Senyurek, 2016
2. Dr. Muhammet Unal, 2015
3. Dr. Can Liu, 2015
4. Dr. Bulent Kaya, 2013
5. Dr. Caner Akuner, 2013
6. Dr. Metin Gumus, 2013
7. Dr. Veli Sume, 2013
8. Dr. Sezai Taskin, 2013
9. Dr. Mustafa Demetgul, 2007- 2009
10. Dr. Pablo Rodríguez Mateos, 2008, 2009
11. Dr. Ahmet Yapici, 2006-2007
12. Dr. Aylin Yenilmez, 2004-2006, 2009
13. Dr. Babur Ozcelik, 2004

SUPERVISED Ph.D. THESIS

1. Wei-Yu Bao, " Tool Cutting Force Modeling and Wear Estimation of Micro-End Milling Operations", 1999, Current position Florida International University, Miami FL
2. Ming Li, "Development and Performance Assessment of Integrated Structural Health Monitoring Systems," 2010, Current position: Visiting Assistant Professor, Miami University Middletown, OH
3. Srikanth Korla, "Inspection of Parts with Complex Geometry and Welds with Structural Health Monitoring Techniques", 2011, Current position: National Institute of Technology (NIT), Warangal.
4. Hadi Fekrmandi, Development of New Structural Health Monitoring Techniques, 2015, Current position: South Dakota School of Mines & Technology.
5. Amin Baghalian, Detecting Structural Defects Using Novel Smart Sensory and Sensorless Approaches, 2017, Current Position: Phillips 66-Research & Development-Energy Transition-Solid oxide fuel cell, solid oxide electrolyzer cell, and reversible systems, Bartlesville, Oklahoma
6. Shervin Tashakori, Novel Structural Health Monitoring and Damage Detection Approaches for Composite and Metallic Structures, 2018, Current Position: Meta, Sunnyvale, California.

7. Alireza Modir, Structural Health Monitoring of Additively Manufactured Components, 2023.

ADVISED MS STUDENTS

1. Ghaleb Abdulsater "Modal Analysis with the Recursive Multichannel Maximum Entropy Method", 1987.
2. Bruce Clarke "A Study of End Milling Operations and System Identification Methods", 1988.
3. Charles McLaughlin "Detection of Tool Breakage", 1990.
4. Medardo Trujillo "Inspection of Metal Cutting by using Acoustic Emission Signals", 1996.
5. Oscar Rodriguez* "Monitoring Micromachining Operations", 1998.
6. Weijing Lee* "Development of a Gear Inspection System", 1998.
7. Tug T. Arkan, "Wear Estimation in Micro-End-Milling", 1998.
8. Amnad Sasirathsiri, "Automatic Programming of CNC for Lens Manufacturing", 2000
9. Victor De Rossi, "Development of a Near-Perfect Lens Surface Generation Advisor (NPLSGA)," 2000
10. Girivasan Venkataraman, "Development of a Composite Material Selection Advisor for Polymer Matrix Composites (PMCs)," 2000
11. Shaoyu Yang, "Genetically Optimized Complex Neural Network System," 2000
12. Reen Nripjeet Singh, "Improvement of Existing Complexity Estimation Method," 2002 from Mechanical Engineering.
13. Liang Li, "Genetic Algorithm Based Open Architecture Cutting Tool Monitoring System," 2002.
14. Peng Chen, "Development of an Open Architecture Control System", 2002
15. Reen Nripjeet Singh, "Processing of Non-Destructive Testing Data by Using Trainable Networks," Worked with his Advisor from Computer Science 2004 received M.S. Degree from Computer Science.
16. Xiaoyu Wang, "Signal Processing for Health Monitoring System Applications," 2005.
17. Jiankun Wu* , Worked on Structural Health Monitoring from accelerometer data, 2005
18. Muhammad Ashraful Haque** , "Experimental Characterization of Piezoelectric Materials," 2007
19. Rene Leon "Development of a Small Energy Scavenger (SES)," 2007
20. Kimberly Bikraj, "Monitoring Tool Wear and Chatter by Using an Index Based Reasoning Approach," 2007
21. Gurjiwan Singh, "Monitoring the Health of Plates with Simultaneous Application of Lamb Waves and Surface Response to Excitation Approaches," 2010
22. Gurjashan Singh, "Health Monitoring of Round Objects Using Multiple Structural Health Monitoring Techniques," 2010
23. Javier Rojas*, Worked on "Implementing the Surface Response to Excitation Method (SuRE)with Non-Contact Sensors at Hard to Reach Locations," 2013
24. Jose Alfonso Matos, "Development of a Body for a Pneumatic Crawler for Radioactive Waste Pipelines," 2013

25. Sergio Gonzalez, "Implementing the Surface Response to Excitation Method (SuRE) with Non-contact Sensors ", 2013
26. Rodrigo Arredondo*, "Panther-M: Small Pick and Place Robot," 2018.

* Student prepared a project report and graduated without thesis.
** The report was finished in 2007 but student has not graduated since he has not completed requirements of the Graduate School.

PROFESSIONAL DEVELOPMENT ACTIVITIES

Summer Faculty Research Program, Naval Air Warfare Center, Aircraft Division (NAWCAD), July- August 2000
Summer Faculty Research Program, Naval Air Warfare Center, Training Systems Division (NAWCTSD), April- June 2001
Air Force/Summer Faculty Fellowship, Wright Patterson AFB, Dayton, OH, July-August 2001
Air Force/Summer Faculty Fellowship, Wright Patterson AFB, Dayton, OH, May-August 2002
Air Force/Summer Faculty Fellowship, Wright Patterson AFB, Dayton, OH, May-August 2003
Summer Faculty Fellowship, Kennedy Space Center, NASA, June-August 2004
Summer Faculty Fellowship, Kennedy Space Center, NASA, June-August 2005
Air Force/Summer Faculty Fellowship, Wright Patterson AFB, Dayton, OH, May-August 2006
Air Force/Summer Faculty Fellowship, Eglin AFB, FL, May-August 2008
Summer Faculty Research Program, Structures and Composite (Code 652), Carderock Division, NSWC, July- August 2010
Summer Faculty Research Program, Structures and Composite (Code 652), Carderock Division, NSWC, July- August 2011
Air Force/Summer Faculty Fellowship, Eglin AFB, FL, worked at University of Colorado at Boulder, June-August 2012
Air Force/Summer Faculty Fellowship, Eglin AFB, FL, June-August 2013

SKILLS

Proficient on FORTRAN, C, and Assembly programming languages (Microchip, Motorola, Intel); experienced on signal processing, time series analysis, neural network applications, instrumentation, automatic data acquisition, robotics, CNC machines and machine vision.

UNIVERSITY SERVICE(Current and past)

- Member of Faculty Senate
- Chair of Faculty Council of Engineering and Computing
- Member of Faculty Council of Engineering and Computing
- Chair of Faculty Council of Engineering and Computing
- Member of the Executive Committee of the UFF
- Member of Faculty Senate Steering Committee
- Member of Faculty Senate Research One Committee
- Member of the College of Engineering and Design Library Committee

- Member of the Strategic Computer Planning Committee
- Faculty Adviser of SAE Student Chapter
- Faculty Adviser of SME Student Chapter
- Member of Departmental Safety Committee at Tufts University (1986-1990)
- Member of the University Committee on Student Life at Tufts University (1988)

PROFESSIONAL ACTIVITIES

- Reviewer for journals (including *Journal of Manufacturing Science and Engineering, Transactions of the ASME, International Journal of Smart Engineering System Design, Roboticas and Computer Integrated Manufacturing, IEEE/ASME Transactions on Mechatronics*).
- Member of International Committee of International Conference on Advances in Production and Processing of Aluminum APPA'2001, 2005.
- Member of the Education and Public Relation Committees of the International Association of Science and Technology for Development (previously)

MEMBERSHIPS

Member of the following organizations at various periods:

- Sigma Xi Scientific Research Society
- Society of Manufacturing Engineers
- American Society of Mechanical Engineers
- International Association of Science and Technology for Development

HOBBIES

- Amateur Radio (Call Sign: KD4JUO)
- Rowing, Boating, Chess, Canoeing, Swimming, Fishing.