Manoj Kumar Dhadwal

Assistant Professor of Aerospace Engineering
San Diego State University
astroflexis.space

Employment

Assistant Professor of Aerospace Engineering, San Diego State University, CA, USA — Aug 2025 – Present

Postdoctoral Researcher, Technical University of Denmark, Denmark — Jul 2022 – Aug 2025

Brain Korea 21 (BK21) Associate Professor (Research, Non-Tenure Track), Seoul National University, South Korea — Oct 2020 – Jul 2022

Senior Researcher, Seoul National University, South Korea — Sep 2020 – Sep 2020

Brain Korea 21 (BK21) Assistant Professor (Research, Non-Tenure Track), Seoul National University, South Korea — Apr 2019 – Aug 2020

Research Professor (Adjunct), Konkuk University, South Korea — Mar 2019 – Feb 2020

Postdoctoral Researcher, Konkuk University, South Korea — Sep 2016 – Feb 2019

Graduate Research Assistant, Konkuk University, South Korea — Mar 2010 – Aug 2016

Senior Project Associate, Indian Institute of Technology (IIT) Kanpur, India — Aug 2009 – Feb 2010

Project Associate, Indian Institute of Technology (IIT) Kanpur, India — Aug 2007 – Aug 2009

Education

PhD in Aerospace Engineering — Mar 2010 – Aug 2016
Konkuk University — South Korea
Dissertation Title: Novel Refined Cross-sectional Modeling, Analysis, and Optimization of Anisotropic Rotor Blades

BE in Aeronautical Engineering, Punjab Engineering College, India — Jul 2003 – Jun 2007

Research Profile

» Research Domains

Core Domains: *Structural Mechanics*, *Structural Dynamics*, *Anisotropic Structures and Elastic Couplings*, *Evolutionary Structural Optimization*
Computational Methods: *Finite Element Method*, *Spectral Methods (Frequency and Time-Frequency Domain for Computational and Experimental Mechanics)*
Aerospace Applications: *Flexible Structures*, *Deployable Space Structures*, *Structural Digital Twins*, *Large Composite Structures*

» Computational Software Development

Blade-INT — Python
Main Contributor; Computational code development for wind turbine blade comprehensive test (static, dynamic, fatigue) simulations (as part of Blatigue-2 project at DTU)

MVSAC — Modern Fortran, Python
Sole Contributor/Maintainer; Multifield variational sectional analysis code (2D finite element) based on three-field (displacements, stresses, strains) variational principle considering shear and torsional boundary effects for anisotropic beam-like structures/rotor blades

RDSAC — Modern Fortran, Python
Sole Contributor/Maintainer; Refined displacement-based sectional analysis code (2D finite element) with nonuniform warping (boundary effects) for anisotropic beam-like structures/rotor blades (*available for free use at edison.re.kr/web/csd/)

KSEC2D-AE Modern Fortran

Sole Contributor/Maintainer; 2D finite element sectional analysis code based on reduced anisotropic elasticity theory for nonhomogeneous anisotropic beam-like structures/rotor blades (*available for free use at edison.re.kr/web/csd/)

PSGA Modern Fortran

Sole Contributor/Maintainer; Particle swarm assisted genetic algorithm for constrained optimization (a hybrid evolutionary algorithm)

» Research Funding and Project Management

No. of funded projects as Co-PI or Lead coordinator: 3
Total grant amount (past 5 years, including all collaborative partners): approx. USD 6,221,580

› Lead Coordinator/Co-PI

ReliaBlade-2: Improving Rotor Reliability through Application of Digital Twins over Entire Life Cycle (Industry-Academia Collaboration) Feb 2025 – Jan 2029
Granted by the Danish Energy Agency under the Energy Technology Development Program (EUDP)
Role: DTU coordinator for two work packages on *Digital Twin Technology* (Nonlinear Blade Modeling) and *Data Management and Processing*;
Status: *Funded*;
Date of Grant: Dec 2024;
Total Grant Amount: DKK 40,110,531 (approx. USD 5,540,580, DTU share: USD 3,087,200)
Partners: FORCE Technology, Siemens Gamesa Renewable Energy (SGRE), SGRE Blades S.A., CEKO Sensors ApS, Polytech A/S, Siemens Industry Software NV, Terotech A/S, TotalEnergies OneTech

Development of high-strength origami truss structure for boom system Jun 2020 – Dec 2021
Multi-university collaborative project supported through the Space Challenge Program by the National Research Foundation (NRF) of Korea (2020M1A3B8084924)
Role: Co-PI (Post-award)
Grant amount: KRW 1,000,000,000 (approx. USD 681,000);
Financial share: 10%, approx. USD 68,100
Partners: Ajou University (Main coordinator), Seoul National University, Seoul National University of Science and Technology

Development of FEA analysis model and identification of failure mechanisms for flexible display panels (Task Coordinator) Sep 2020 – May 2021
Sponsored by Samsung Display, Korea

› Other Major Contributions (Selected)

A study on interlaminar stress predictions of composite beams using multifield variational method (Initiated based on own idea) May 2019 – Apr 2020
Supported by Konkuk University, Initiated research

Development of S/W and educational contents for structural vibration and composite material analysis Jul 2014 – Mar 2019
Supported through the EDISON Program by the National Research Foundation (NRF) of Korea funded by the Ministry of Science, ICT & Future Planning (Composite beam cross-sectional analyses RDSAC and Ksec2d-AE free versions hosted on the web-based platform)

FE modeling and analysis of composite blades using mixed variational principle (Initiated based on own idea) Dec 2014 – Nov 2015
Supported by Konkuk University

Development of bearingless rotor hub system Oct 2010 – Nov 2013
Supported by the Korea Aerospace Research Institute (KARI), funded by the Ministry of Knowledge Economy (MKE) of Korea

Design and development of an autonomous mini-helicopter Aug 2007 – Feb 2010
Sponsored by the Department of Science and Technology (DST), New Delhi, India

Teaching and Supervision

» Teaching Qualifications

Teaching Lab Course Nov 2024
DTU Learning Lab, Technical University of Denmark Lyngby, Denmark
Completed a four-day course on teaching and learning concepts, such as active learning, constructive alignment, and inductive approach, and applied them to a teaching session on *Digital Twins in Flexible Structural Dynamics* with peer feedback.

» Undergraduate Courses Taught

Co-Instructor, Computational Structural Analysis (No. of Students: 10+) Spring 2013 & Fall 2014
Department of Aerospace Information Engineering, Konkuk University Seoul, South Korea
Delivered full semester course on finite element analysis (2 Semesters)

Teaching Assistant, Engineering Vibrations (No. of Students: 50+) Fall 2011, 2012 & 2013
Department of Aerospace Information Engineering, Konkuk University Seoul, South Korea
Delivered lectures on experimentation & Matlab coding

Teaching Assistant, Aircraft Structures (No. of Students: 40+) Spring 2011 & 2012
Department of Aerospace Information Engineering, Konkuk University Seoul, South Korea
Delivered lectures on experimentation (static bending tests on cantilever beams)

» Graduate Courses Taught

Instructor, Programming for Data Science (No. of Students: 30+; Delivered Virtually) Spring 2021
Department of Mechanical Engineering, Seoul National University Seoul, South Korea
Introduced and delivered graduate level course covering applied data science and machine learning using Python programming

Instructor, Finite Element Method (No. of Students: 5) Spring 2019
Department of Aerospace Information Engineering, Konkuk University Seoul, South Korea
Delivered graduate-level course covering FEM theory and implementation using Python programming

» Mentoring/Supervision

Summary

- No. of undergraduate students mentored: 2
- No. of graduate students mentored: 5

Research Supervision/Mentoring

- Mentored (Co-advisor) **Kacper Szczykno** (graduate, MS) on multifidelity structural analysis and optimization of wind turbine blades. Technical University of Denmark (DTU), Spring 2025
- Mentored **Hyeonho Cho** (graduate, MS-PhD) on the finite element-based flexible multibody analysis of origami solar sail system as part of the project "Development of high-strength origami truss structure for boom system", Space Challenge Program, National Research Foundation of Korea. Seoul National University, 2020–2021
- Mentored **Seong Woo Lee** (graduate, MS-PhD) on the crack propagation analysis of flexible display panels as part of the industrial project funded by Samsung Display, Korea. Seoul National University,

2020–2021

- Mentored **Jae Seong Bae** (graduate, PhD) on cross-sectional analysis and optimization of composite beams and wind turbine blades. Konkuk University, 2017–2019 (*papers C14*, *C17*)
- Mentored **Young Woo Kim** and **Ju Hyuk Kim** (undergraduate) on the cross-sectional analysis of HART II rotor blades. Konkuk University, 2014–2015 (*paper J5*)
- Mentored **Kyu Baek Lim** and **Jae Seong Bae** (graduate, MS) on flexbeam analysis and optimization. Konkuk University, 2013–2014 (*papers J1*, *NC4*, *NC6*)

Leadership and Service

» Honors & Awards

Otto Moensteds Foundation - Travel Grant for AIAA SciTech 2025, Grant Amount: DKK 7,500 (USD 1,035), Denmark — Nov 2024

Research Professorship awarded through Brain Korea 21 (BK21) programs (Brain Korea PLUS and FOUR programs), Seoul National University
Salary award of KRW 124.5 Million, approx. USD 84,700, funded by the NRF of Korea, South Korea — Apr 2019 – Jul 2022

Best Paper Award, Design II Session (Coauthor and Mentor), 6th Asian/Australian Rotorcraft Forum and Heli Japan, Kanazawa, Japan — Nov 2017

Best Paper Award, Second Place, Korean Society for Composite Materials (KSCM) Spring Conference, Sejong City, South Korea — Apr 2017

Best Paper Award, First Place, Korean Society for Composite Materials (KSCM) Fall Conference, Seoul, South Korea — Nov 2014

Graduate Scholarship for Excellent Foreign Graduates, Konkuk University, Seoul, South Korea — 2010 – 2013

Brain Korea 21 (BK21) Scholarship, Konkuk University, Seoul, South Korea — 2010 – 2012

Brain Korea 21 (BK21) KUL House Scholarship, Konkuk University, Seoul, South Korea — 2010

» Dissertation/Thesis Examiner Committees

PhD Thesis: ***A study on reducing the deflection of circular tubes under transverse impact through slits*****, Youngkyung Do,** Seoul National University, Seoul, South Korea — Fall 2023

PhD Thesis: ***Development of an enhanced mixed finite element method considering the stability in an incompressible analysis*****, Giseok Yun,** Seoul National University, Seoul, South Korea — Fall 2021

PhD Thesis: ***Overlapping finite element analysis for structures under thermal loads with spatially varying gradients*****, Namkyu Kim,** Seoul National University, Seoul, South Korea — Fall 2021

» Reviewer Activities

- **Reputed Journals:** Computers and Structures (2); Composite Structures (5); Structural and Multidisciplinary Optimization (2); International Journal for Aeronautical and Space Sciences (10); Swarm and Evolutionary Computation (2); Journal of the American Helicopter Society (1)
- **Annual Forums and Meetings of Professional Societies:** AIAA SciTech Forums (9); American Association for the Advancement of Science (AAAS), Annual Meeting Session Proposals (1); WindEurope Annual Event 2025, Industry Track Sessions (6)
- **Awards Committees:** AIAA Graduate Awards 2024 (reviewed 7 student applications), AIAA Graduate Awards 2025 (reviewed 11 student applications)

» Conference Organization

Chair, Organized Session: Recent advances in structural finite elements Apr 2022
2022 COSEIK (Computational Structural Engineering Institute of Korea) Annual Conference, Jeju, Republic of Korea

Chair, Organized Session: Recent advances in structural finite elements Aug 2020
2020 COSEIK (Computational Structural Engineering Institute of Korea) Annual Conference, Kangwon-do, Republic of Korea

Co-Chair, Session: MATH 2 Sandwich and FGM Structures II Jul 2017
The Twenty-fifth Annual International Conference on Composites/Nano Engineering (ICCE-25), Rome, Italy

» Professional Society Memberships

Senior Member · American Institute of Aeronautics and Astronautics (AIAA)
Member · American Society of Mechanical Engineers (ASME)
Member · U.S. Association for Computational Mechanics (USACM)
Member · Vertical Flight Society (VFS, Formerly American Helicopter Society)
Member · American Association for the Advancement of Science (AAAS)

List of Publications

ORCID: 0000-0002-3307-1871

Google Scholar: scholar.google.com/citations?user=PoA-eyIAAAAJ

» Key Publications

[K3] **Dhadwal, MK** (2025). Spectral element formulation for general anisotropic beams with elastic couplings. In: *Proceedings of the AIAA SciTech 2025 Forum (AIAA 2025-0419)*. Orlando, Florida, USA. https://doi.org/10.2514/6.2025-0419
Impact: Pioneering work on a generalized frequency-domain formulation for slender aerospace structures, such as space booms.

[K2] **Dhadwal, MK**, Jung SN (2019). Generalized multifield variational formulation with interlaminar stress continuity for multilayered anisotropic beams. Composites Part B: Engineering 168:476–487. https://doi.org/10.1016/j.compositesb.2019.03.063
Impact: A cutting-edge code based on a novel formulation for highly efficient analysis of aerospace structures.

[K1] **Dhadwal, MK**, Jung SN (2017). On boundary effects due to nonuniform shear and torsional warping for open section anisotropic beams. Composite Structures 161:350–361. https://doi.org/10.1016/j.compstruct.2016.11.057
Impact: First-of-its kind study demonstrating the impact of local boundary constraints on slender aerospace structures.

» Refereed Journal Articles

[J13] **Dhadwal, MK**, Eder MA, Sarhadi A (2025). Mixed variational hybrid beam/solid element for nonprismatic anisotropic beam cross-sections. (Forthcoming)

[J12] **Dhadwal, MK**, Jung SN (2020). Free-edge stress evaluation of general laminated composites using a novel multifield variational beam formulation. Composite Structures 233:111705. https://doi.org/10.1016/j.compstruct.2019.111705
Quartile 1: Top 10% (Mechanics), 4 Citations

[J11] **Dhadwal, MK**, Jung SN (2019). Generalized multifield variational formulation with interlaminar stress continuity for multilayered anisotropic beams. Composites Part B: Engineering 168:476–487. https://doi.org/10.1016/j.compositesb.2019.03.063
Quartile 1: Top 1% (Engineering, Multidisciplinary), 5 Citations

[J10] **Dhadwal, MK**, Jung SN (2019). Multifield variational sectional analysis for accurate stress computation of multilayered composite beams. AIAA Journal 57(4):1702–1714. https://doi.org/10.2514/1.J057384
Representative journal in Aerospace Engineering; Quartile 1: Top 25% (Engineering, Aerospace), 6 Citations

[J9] **Dhadwal, MK**, Jung SN (2017). Multifield variational finite element sectional analysis of composite beams. Composites Research 30(6):343–349. https://doi.org/10.7234/composres.2017.30.6.343
Representative journal of the Korean Society for Composite Materials;

[J8] **Dhadwal, MK**, Jung SN (2017). Effect of three-dimensional warping on stiffness constants of closed section composite beams. International Journal of Aeronautical and Space Sciences 18(3):467–473. https://doi.org/10.5139/IJASS.2017.18.3.467
Representative journal of the Korean Society for Aeronautical and Space Sciences; 1 Citation

[J7] **Dhadwal, MK**, Jung SN (2017). On boundary effects due to nonuniform shear and torsional warping for open section anisotropic beams. Composite Structures 161:350–361. https://doi.org/10.1016/j.compstruct.2016.11.057
Quartile 1: Top 10% (Mechanics), 10 Citations

[J6] **Dhadwal, MK**, Jung SN (2016). Refined sectional analysis with shear center prediction for nonhomogeneous anisotropic beams with nonuniform warping. Meccanica 51(8):1839–1867.

https://doi.org/10.1007/s11012-015-0338-2
Quartile 3 (Mechanics), 27 Citations

[J5] Jung SN, **Dhadwal, MK**, *Kim YW, *Kim JH, Riemenschneider J (2015). Cross-sectional constants of composite blades using computed tomography technique and finite element analysis. Composite Structures 129:132–142.
https://doi.org/10.1016/j.compstruct.2015.03.074
Quartile 1: Top 10% (Mechanics), 21 Citations
Collaboration with German Aerospace Center (DLR)
**Mentored two undergraduate (BS) students*

[J4] Jung SN, You YH, **Dhadwal, MK**, Riemenschneider J, Hagerty BP (2015). Study on blade property measurement and its influence on air/structural loads. AIAA Journal 53(11):3221–3232. https://doi.org/10.2514/1.j053686
Representative journal in Aerospace Engineering; Quartile 1: Top 25% (Engineering, Aerospace), 19 Citations
Collaboration with German Aerospace Center (DLR) and NASA

[J3] **Dhadwal, MK**, Jung SN, Kim TJ (2014). Evolutionary shape optimization of flexbeam sections of a bearingless helicopter rotor. Composites Research 27(6):207–212.
https://doi.org/10.7234/composres.2014.27.6.207
Representative journal of the Korean Society for Composite Materials; 8 Citations
Collaboration with Korea Aerospace Research Institute (KARI)

[J2] **Dhadwal, MK**, Jung SN, Kim CJ (2014). Advanced particle swarm assisted genetic algorithm for constrained optimization problems. Computational Optimization and Applications 58(3):781–806. https://doi.org/10.1007/s10589-014-9637-0
Quartile 1: Top 25% (Mathematics, Applied), 82 Citations

[J1] **Dhadwal, MK**, *Lim KB, Jung SN, Kim TJ (2013). Particle swarm assisted genetic algorithm for the optimal design of flexbeam sections. International Journal of Aeronautical and Space Sciences 14(4):341–349. https://doi.org/10.5139/IJASS.2013.14.4.341
Representative journal of the Korean Society for Aeronautical and Space Sciences; 4 Citations
Collaboration with Korea Aerospace Research Institute (KARI)
**Mentored one graduate (MS) student*

» International Conference Proceedings

[C22] **Dhadwal, MK**, Berring P, Nielsen SK, van Beveren C, Nielsen D, Quiring P, Branner K (2025). Enhancing data analytics for dynamic fatigue testing of wind turbine blades: Insights from a recent campaign. In: *Wind Energy Science Conference (WESC 2025)*. Nantes, France.
https://wesc2025.eu/
Key publication from the Blatigue-2 Project on nonlinear dynamical phenomena in large blades

[C21] **Dhadwal, MK**, Berring P, Nielsen SK, Branner K (2025). Comprehensive computational framework for structural test simulations of wind turbine blades. In: *Wind Energy Science Conference (WESC 2025)*. Nantes, France. https://wesc2025.eu/
Key publication from the Blatigue-2 Project on a new comprehensive blade test simulation tool

[C20] **Dhadwal, MK** (2025). Spectral element formulation for general anisotropic beams with elastic couplings. In: *Proceedings of the AIAA SciTech 2025 Forum (AIAA 2025-0419)*. Orlando, Florida, USA. https://doi.org/10.2514/6.2025-0419

[C19] **Dhadwal, MK**, Eder MA, Sarhadi A, Semenov S, Branner K (2022). Recent developments and challenges in the cross-sectional analysis of composite beams. In: *International Session of KSME (Korean Society of Mechanical Engineers) Annual Meeting*. Jeju, Korea

[C18] **Dhadwal, MK** (2021). Sectional analysis of hybrid CNT/graphene reinforced composite beams. In: *2021 Asian-Pacific Intenational Symposium on Aerospace Technology (APISAT)*. Jeju, Korea
Key publication from the Space Challenge Project on origami-inspired deployable composite booms

[C17] **Dhadwal, MK**, *Bae JS, Jung SN (2019). Stress predictions of composite beams with

interlaminar continuity using multifield variational analysis. In: *Proceedings of the AIAA SciTech 2019 Forum (AIAA 2019-2272)*. San Diego, California, USA.
https://doi.org/10.2514/6.2019-2272
**Mentored one graduate (PhD) student*

[C16] **Dhadwal, MK**, Jung SN (2018). Interlaminar stresses of composite blades using generalized multifield variational sectional analysis. In: *Proceedings of the 7th Asian/Australian Rotorcraft Forum (ARF)*. Jeju Island, Korea

[C15] **Dhadwal, MK**, Jung SN (2017). Generalized Timoshenko theory for functionally graded beams with three-dimensional warping. In: *Proceedings of the 6th Asian/Australian Rotorcraft Forum (ARF) and Heli Japan 2017*. Kanazawa, Japan

[C14] *Bae JS, **Dhadwal, MK**, Jung SN (2017). Structural optimization of large-scale wind turbine blade cross-sections via an analytical beam approach. In: *Proceedings of the 6th Asian/Australian Rotorcraft Forum (ARF) and Heli Japan 2017*. Kanazawa, Japan
**Mentored one graduate (PhD) student*
Best paper award

[C13] **Dhadwal, MK**, Jung SN (2017). Multifield variational sectional analysis for composite blades based on generalized Timoshenko-Vlasov theory. In: *Proceedings of the 43rd European Rotorcraft Forum (ERF)*. Milan, Italy

[C12] **Dhadwal, MK**, Jung SN (2017). Multifield variational analysis with nonuniform shear and torsional warping for composite beam cross-sections. In: *Proceedings of the Twenty-Fifth Annual International Conference on Composites/Nano Engineering (ICCE-25)*. Rome, Italy

[C11] **Dhadwal, MK**, Jung SN (2016). Multifield variational sectional analysis with nonuniform shear and torsional effects for composite beams. In: *Proceedings of the 10th Asian-Australasian Conference on Composite Materials (ACCM-10)*. Busan, Korea

[C10] **Dhadwal, MK**, Jung SN (2016). Generalized multifield variational sectional analysis of composite blades considering nonuniform torsion. In: *Proceedings of the AHS International's 72nd Annual Forum & Technology Display*. West Palm Beach, Florida, USA: AHS International
**Key PhD publication in the annual forum of the Vertical Flight Society (Formerly American Helicopter Society)*

[C9] **Dhadwal, MK**, Jung SN (2015). Generalized refined analysis of open section composite beams considering 3D nonuniform warping effects. In: *Proceedings of the 4th Asian/Australian Rotorcraft Forum*. Bengaluru, India

[C8] **Dhadwal, MK**, Jung SN (2015). Generalized anisotropic elasticity approach for thin-walled composite beams with 3D nonuniform warping effects. In: *Proceedings of the 10th JSCM–KSCM Joint Symposium on Composite Materials*. Jeonju, Korea

[C7] **Dhadwal, MK**, Jung SN (2015). A generalized approach for cross-section analysis of nonhomogeneous composite beams with nonuniform shear and torsion. In: *Proceedings of the International Conference on Advances in Mechanics of Composite Materials and Structures (Composites Seoul)*. Seoul, Korea

[C6] You YH, **Dhadwal, MK**, Jung SN (2015). Optimal active twist control scenario for rotor performance improvement and vibration reduction. In: *Proceedings of the 41st European Rotorcraft Forum (ERF)*. Munich, Germany

[C5] Jung SN, You YH, **Dhadwal, MK**, Hagerty BP (2014). Blade property measurement and its assessment on air/structural loads of HART II rotor. In: *Proceedings of the American Helicopter Society 70th Annual Forum*. Montréal, Québec, Canada
Collaboration with NASA Ames

[C4] **Dhadwal, MK**, Jung SN, Kim CJ, Kim TJ (2013). Flexure section optimization using advanced particle swarm-assisted genetic algorithm. In: *Proceedings of the 2nd Asian/Australian Rotorcraft Forum (ARF)*. Tianjin, China
Collaboration with Korea Aerospace Research Institute (KARI)

[C3] Park IJ, **Dhadwal, MK**, Jung SN, Kim DH (2011). Experimental validation of cross-sectional

analysis for composite rotor blades. In: *Proceedings of the 18th International Conference on Composite Materials (ICCM18)*. Jeju, Korea

[C2] Swaroop BB, **Dhadwal, MK**, Venkatesan C (2009). Experimental studies on pitch-roll-yaw control of a mini–helicopter on a test rig. In: *Proceedings of the AHS Specialists' Meeting, 2nd International Forum on Rotorcraft Multidisciplinary Technology (Rotor Korea 2009)*. Seoul, Korea

[C1] Swaroop BB, **Dhadwal, MK**, Kushari A, Upadhyay CS, Venkatesan C (2009). Experimental studies in the development of an autonomous mini – helicopter. In: *Proceedings of the IISc Centenary International Conference and Exhibition on Aerospace Engineering (ICEAE 2009)*. Bangalore, India

» National (Korean) Conference Proceedings

[NC15] **Dhadwal, MK**, Kim DN (2022). Multifield finite element sectional analysis of multiscale cellular metamaterials. In: *Proceedings of the 2022 COSEIK (Computational Structural Engineering Institute of Korea) Annual Conference*. Jeju, Korea

[NC14] **Dhadwal, MK**, Kim DN (2020). Improved structural behavior of multiscale composite wind turbine blades reinforced with graphene nanoplatelets. In: *Proceedings of the 2020 KSME (Korean Society of Mechanical Engineers) Annual Conference*. Korea

[NC13] **Dhadwal, MK**, Kim DN (2020). Numerical investigation of sectional properties and stresses of large-scale wind turbine blades using an efficient multifield formulation. In: *Proceedings of the 2020 COSEIK (Computational Structural Engineering Institute of Korea) Annual Conference*. Kangwon-do, Korea

[NC12] **Dhadwal, MK**, Kim DN (2020). Computationally efficient and accurate cross-sectional analysis of cnt-reinforced composite beams with elastic couplings. In: *Proceedings of the 2020 KSME (Korean Society of Mechanical Engineers) CAE & Applied Mechanics Conference*. Gyeongju, Korea

[NC11] **Dhadwal, MK**, Jung SN (2018). Accurate computation of interlaminar stresses in composite blades using multifield variational formulation. In: *Proceedings of the 2018 KSAS (Korean Society of Aeronautical and Space Sciences) Fall Conference*. Jeju, Korea

[NC10] **Dhadwal, MK**, Jung SN (2017). Sectional analysis of functionally graded beams based on multifield variational formulation. In: *Proceedings of the 2017 Fall Conference of the Korean Society of Composite Materials (KSCM)*. Daejeon, Korea
Best paper award

[NC9] **Dhadwal, MK**, Jung SN (2017). Finite element sectional analysis of composite blades based on multifield variational formulation. In: *Proceedings of the 2017 KSAS (Korean Society of Aeronautical and Space Sciences) Spring Conference*. Kangwon-do, Korea

[NC8] **Dhadwal, MK**, Jung SN (2017). Multifield variational finite element sectional analysis of composite beams. In: *Proceedings of the 2017 Spring Conference of the Korean Society for Composite Materials (KSCM)*. Sejong City, Korea

[NC7] **Dhadwal, MK**, Jung SN, Kim TJ (2014). Evolutionary shape optimization of flexbeam sections of a bearingless helicopter rotor. In: *Proceedings of the 2014 KSCM (Korean Society for Composite Materials) Fall Conference*. Seoul, Korea
Collaboration with Korea Aerospace Research Institute (KARI)
Best paper award

[NC6] **Dhadwal, MK**, *Bae JS, Jung SN, Kim TJ (2014). Shape optimization of composite flexbeam cross-sections of a bearingless helicopter rotor. In: *Proceedings of the 2014 KSAS (Korean Society of Aeronautical and Space Sciences) Fall Conference*. Jeju, Korea
Collaboration with Korea Aerospace Research Institute (KARI)
**Mentored one graduate (MS) student*

[NC5] **Dhadwal, MK**, Jung SN (2014). General purpose cross-sectional analysis program for nonhomogeneous anisotropic beams. In: *Proceedings of the 2014 KSAS (Korean Society of Aeronautical and Space Sciences) Spring Conference*. Korea

[NC4] **Dhadwal, MK**, *Lim K, Jung SN, Kim TJ (2013). Optimal design of flexbeam cross-sections using

particle swarm assisted genetic algorithm. In: *Proceedings of the 2013 KSAS (Korean Society of Aeronautical and Space Sciences) Fall Conference*. Jeju, Korea
Collaboration with Korea Aerospace Research Institute (KARI)
**Mentored one graduate (MS) student*

[NC3] **Dhadwal, MK**, Jung SN, Kim TJ (2013). Hybrid of particle swarm and genetic algorithm for constrained real parameter optimization. In: *Proceedings of the 2013 KSAS (Korean Society of Aeronautical and Space Sciences) Spring Conference*. Korea
Collaboration with Korea Aerospace Research Institute (KARI)

[NC2] **Dhadwal, MK**, Kim SH, Park JS, Jung SN (2011). Experimental characterization of variable-twist SMA hybrid composite rotor blades for tilt rotor application. In: *Proceedings of the 2011 KSAS (Korean Society of Aeronautical and Space Sciences) Spring Conference*. Gyeongju, Korea

[NC1] Park IJ, **Dhadwal, MK**, Jung SN (2010). Modeling of composite rotor blades with piezoelectric fiber actuators based on mixed beam approach. In: *Proceedings of the 2010 KSAS (Korean Society of Aeronautical and Space Sciences) Fall Conference*. Jeju, Korea