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EDUCATIONS

- 2012, Amirkabir university of technology Tehran, Ph.D. Aerospace, Aerostructure.

Thesis: Modeling the damage growth in composite laminates using a new micro-meso approach in continuum damage mechanics framework

- 2004, Sharif University of Technology Tehran, MSc. Aerospace, Aerostructure.

Thesis: Numerical modeling of delamination growth in laminated composites under in-plane shear and compressive loading

- 2001, Ferdowsi Mashhad, BSc. Mechanic - Solids and Structure.

Thesis: Optimizing a cantilever beam for minimum deflection

TAUGHT COURSES

Post-graduate: Advanced Aerostructural Design, Advanced Aerostructural Analysis, Advanced Structural Dynamics, Mechanics of Composite Laminate, Advanced Mathematics, Damage Mechanics in Composite laminates.

RESEARCH INTERESTS

- Analysis and Design of Aircraft Structures;
- Linear and Non-linear Finite Element Methods;
- Continuum Damage Mechanics;
- Fatigue and Fracture of Composite Materials;
- Delamination Buckling, Post-buckling and Growth Analysis;
- Static and Dynamic instability of NEMS.

PEER-REVIEWED JOURNAL PAPERS

- Rafie, A., Madadi, H., **Farrokhhabadi**, A., Herráez, M., In situ strength analysis of cross-ply composite laminates containing defects and interleaved woven layer using a computational micromechanics approach, *Fatigue and Fracture of Engineering Materials and Structures*, 2021, 44(5), pp. 1225–1240.
- **Farrokhhabadi**, A., Neyestani, S., Akbari, D., Sarkhosh, R., Assessment of delamination growth due to matrix cracking in hybrid Glass-Kevlar composite laminates using experimental, numerical and analytical methods, *Engineering Fracture Mechanics*, 2021, 247, 107691.
- Hamidin, F., **Farrokhhabadi**, A., Ahmadi, H., The Effect of Core Shape on the Bending Response of Sandwich Panels with Filled and Unfilled Sine and Square Corrugated Cores, *Journal of Failure Analysis and Prevention*, 2021, 21(2), pp. 537–546.
- Taghizadeh, S.A., Naghdinasab, M., Madadi, H., **Farrokhhabadi**, A., Investigation of novel multi-layer sandwich panels under quasi-static indentation loading using experimental and numerical analyses, *Thin-Walled Structures*, 2021, 160, 107326.
- Veisi, H., Farrokhhabadi, A., Investigation of the equivalent material properties and failure stress of the re-entrant composite lattice structures using an analytical model, *Composite Structures*, 2021, 257, 113161.
- Azadi, M., Alizadeh, M., Jafari, S.M., **Farrokhhabadi**, A., Cumulative acoustic emission energy for damage detection in composites reinforced by carbon fibers within low-cycle fatigue regime at various displacement amplitudes and rates, *Polymers and Polymer Composites*, 2021.
- **A Farrokhhabadi**, SA Taghizadeh, H Madadi, H Norouzi, A Ataei , Experimental and numerical analysis of novel multi-layer sandwich panels under three point bending load, 2020, *Composite Structures* 250, 112631.
- MA Samani, A **Farrokhhabadi**, S Homayoni Boora, Determining of a closed-form relation for evolution of crack density and induced delamination in off-axis composite laminates under uniaxial loading condition, 2020, *Mechanics of Advanced Materials and Structures* 27 (11), 859-868.
- H Madadi, M Naghdinasab, A **Farrokhhabadi**, Numerical investigation of matrix cracking propagation in cross-ply laminated composites subjected to three-point bending load using concurrent multiscale model, 2020, , *Fatigue & Fracture of Engineering Materials & Structures* 43 (6), 1159-1169.
- R Babaei, A **Farrokhhabadi**, Prediction of debonding growth in two-dimensional RVEs using an extended interface element based on continuum damage mechanics concept, 2020, *Composite Structures* 238, 111981.
- HM Bahabadi, A **Farrokhhabadi**, GH Rahimi, Investigation of debonding growth between composite skins and corrugated foam-composite core in sandwich panels under bending loading, 2020, *Engineering Fracture Mechanics*, 106987.
- A Delbariani-Nejad, A **Farrokhhabadi**, A failure criterion to predict the onset of matrix cracking induced delamination in general composite laminates, 2020, *Composite Structures* 235, 111564.
- A Delbariani-Nejad, M Malakouti, A **Farrokhhabadi**, Reliability analysis of metal-composite adhesive joints under debonding modes I, II, and I/II using the results of experimental and FEM analyses, 2020, *Fatigue & Fracture of Engineering Materials & Structures* 42 (12), 2644-2662.

- **Farrokhhabadi**, A., Bahrami, M., Babaei, R., Predicting the matrix cracking formation in symmetric composite laminates subjected to bending loads, 2019, Composite Structure, 223,110945.
- Baghaee, M., **Farrokhhabadi**, A., Jafari-Talookolaei, R.-A., Modeling, analysis, and control of MFC sandwiched laminate panel flutter with general layups and arbitrary boundary conditions, 2019, Composite Structure, 223,110940.
- SoltanRezaee, M., Bodaghi, M., **Farrokhhabadi**, A., A thermosensitive electromechanical model for detecting biological particles, 2019, Scientific Reports 9(1),11706.
- Bahrami, M., **Farrokhhabadi**, A., Propagation of matrix cracking and induced delamination in cross-ply composite beams subjected to bending loads, 2019, Mechanics of Advanced Composite Structures, 6(1), pp. 45-50.
- SoltanRezaee, M., Bodaghi, M., **Farrokhhabadi**, A., Hedayati, R. Nonlinear stability analysis of piecewise actuated piezoelectric microstructures, 2019, International Journal of Mechanical Sciences 160, pp. 200-208
- Mahdavi, H., Rahimi, G.H., **Farrokhhabadi**, A., Fatigue performance analysis of GRE composite pipes by conducting tension-tension tests on the rings cut from the pipe, 2019, Journal of Testing and Evaluation 49(4).
- Baghaee, M., **Farrokhhabadi**, A., Jafari-Talookolaei, R.-A. A solution method based on Lagrange multipliers and Legendre polynomial series for free vibration analysis of laminated plates sandwiched by two MFC layers, Journal of Sound and Vibration 447, pp. 42-60
- **Farrokhhabadi**, A., Babaei, R. Development of an integrated micro macro model for anticipating matrix cracking evolution and fiber breakage in the laminated composite containing an open hole, 2019, Engineering Fracture Mechanics 211, pp. 161-179.
- Babaei, R., **Farrokhhabadi**, A. Predicting the debonding formation and induced matrix cracking evolution in open-hole composite laminates using a semi-consequence micro-macro model 2019, Composite Structures 210, pp. 274-293.
- Taghizadeh, S.A., **Farrokhhabadi**, A., Liaghat, G., Mohammadi, S.F., Ahmadi, H. Characterization of compressive behavior of PVC foam infilled composite sandwich panels with different corrugated core shapes, 2019 Thin-Walled Structures 135, pp. 160-172.
- Tavakolian, F., **Farrokhhabadi**, A., SoltanRezaee, M., Rahmanian, S. Dynamic pull-in of thermal cantilever nanoswitches subjected to dispersion and axial forces using nonlocal elasticity theory, 2019, Microsystem Technologies 25(1), pp. 19-30.
- Baghaee, M., **Farrokhhabadi**, A., Jafari-Talookolaei, R.-A. A new semi-analytical solution method for free vibration analysis of composite rectangular plates with general edge constraints coupled with single piezoelectric layer, 2018, Journal of Intelligent Material Systems and Structures 29(20), pp. 3873-3889.
- Mahdavi, H., Rahimi, G.H., **Farrokhhabadi**, A. Failure Analysis of ($\pm 55^\circ$)₉ Filament-Wound GRE Pipes Using Explicit Finite Element Method: A Comparison with the Experimental Method, 2018, Journal of Failure Analysis and Prevention 18(6), pp. 1526-1533
- Rahmani, M., **Farrokhhabadi**, A. Prediction of induced delamination development in [0/90]_s composite laminates using a computational analytical approach, 2018, Composite Structures, 203, pp. 903-916

- Delbariani Nejad, A, **Farrokhhabadi**, A., Jafari, S.R. An energy based approach for reliability analysis of delamination growth under mode I, mode II and mixed mode I/II loading in composite laminates, 2018, *International Journal of Mechanical Sciences* 145, pp. 287-298
- Madadi H., **Farrokhhabadi**, A., Development a refined numerical model for evaluating the matrix cracking and induced delamination formation in cross-ply composite laminates, 2018, *Composite Structures*, 200(15), pp. 12-24
- Naghdinasab, M., **Farrokhhabadi**, A. Madadi, H., A numerical method to evaluate the material properties degradation in composite RVEs due to fiber-matrix debonding and induced matrix cracking, 2018, *Finite Elements in Analysis and Design*, 146, pp. 84-95.
- Gazor, M.S., Rahimi, G.H., Farrokhhabadi, A. The effect of the arrangement of corrugated composite on the R-curve of the sandwich structures with hybrid corrugated/foam core under mode I loading, 2018, *Theoretical and Applied Fracture Mechanics*, 96, pp. 326-333.
- Kamareh, F., **Farrokhhabadi**, A., Rahimi, G., Experimental and numerical investigation of skin/lattice stiffener debonding growth in composite panels under bending loading, , 2018, *Engineering Fracture Mechanics*, 190, pp. 471-490.
- Mahdavi, H.R., Rahimi, G.H., **Farrokhhabadi**, A., Failure Analysis of Glass-Reinforced Epoxy Pipes under Internal Hydrostatic Pressure: A Comparison with the Split Disk Test Method, , 2018, *Journal of Pressure Vessel Technology*, Transactions of the ASME, 140(1),014501.
- Taghavi Larijani, S.S., **Farrokhhabadi**, A., A variational approach for predicting initiation of matrix cracking and induced delamination in symmetric composite laminates under in-plane loading (Article in Press), 2017, *Science and Engineering of Composite Materials*
- Tavakolian, F., **Farrokhhabadi**, A., Size-dependent dynamic instability of double-clamped nanobeams under dispersion forces in the presence of thermal stress effects , 2017, *Microsystem Technologies*, 23 (8), 3685-3699.
- Tavakolian, F., **Farrokhhabadi**, A., Mirzaei, M., Pull-in instability of double clamped microbeams under dispersion forces in the presence of thermal and residual stress effects using nonlocal elasticity theory, 2017, *Microsystem Technologies*, 23 (4), 839-848.
- Babaei, R., **Farrokhhabadi**, A., A computational continuum damage mechanics model for predicting transverse cracking and splitting evolution in open hole cross-ply composite laminates, 2017, *Fatigue and Fracture of Engineering Materials and Structures*, 40 (3), 375-390.
- Mohammadi, B., Rohanifar, M., Salimi-Majd, D., **Farrokhhabadi** A., Micromechanical prediction of damage due to transverse ply cracking under fatigue loading in composite laminates, 2017 *Journal of Reinforced Plastics and Composites*, 36 (5), 377-395.
- A generalized plane-strain crack density-based model for evaluating the finite fracture toughness of composite laminates, Farrokhhabadi, A., Mohammadi, B., Hosseini-Toudeshky, H., 2017 *Mechanics of Advanced Materials and Structures*, 24 (2), 131-141.
- SoltanRezaee, M., **Farrokhhabadi**, A., Ghazavi, M.R., The influence of dispersion forces on the size-dependent pull-in instability of general cantilever nano-beams containing geometrical non-linearity, 2016, *International Journal of Mechanical Sciences*, 119, 114-124.
- Paknejad, A., Rahimi, G., **Farrokhhabadi**, A., Analytical solution of piezoelectric energy harvester patch for various thin multilayer composite beams, , 2016, *Composite Structures*, 154, 694-706.

- **Farrokhhabadi, A.**, Naghdi Nasab, M., Micromechanical study of fibre- matrix debonding and matrix cracking using cohesive zone model and extended finite element method, 2016, Journal of Science and Technology of Composites, 3, 21-30 (In Persian).
- Mahdavi, H.R., Rahimi, G.H., **Farrokhhabadi, A.**, Failure analysis of ($\pm 55^\circ$)₉ filament-wound GRE pipes using acoustic emission technique, 2016, Engineering Failure Analysis, 62, 178-187.
- **Farrokhhabadi, A.**, Mohebshahedin, A., Rach, R., Duan, J.-S., An improved model for the cantilever NEMS actuator including the surface energy, fringing field and Casimir effects, 2016, Physica E: Low-Dimensional Systems and Nanostructures, 75, 202-209.
- Tavakolian, F., **Farrokhhabadi, A.**, Mirzaei, M., Pull-in instability of double clamped microbeams under dispersion forces in the presence of thermal and residual stress effects using nonlocal elasticity theory, 2016, Microsystem Technologies, Article in Press.
- Mohebshahedin, A., **Farrokhhabadi, A.**, The influence of the surface energy on the instability behavior of NEMS structures in presence of intermolecular attractions, 2015, International Journal of Mechanical Sciences, 101-102, 437-448.
- **Farrokhhabadi, A.**, Aghaebrahimi Samani, M., Determination of a general closed form relation for crack density and induced delamination evolution in cross ply laminates under uniaxial loading condition based on an extended shear lag model, 2015, Modares Mechanical Engineering, 15, 361-370 (In Persian).
- Mokhtari, J., **Farrokhhabadi, A.**, Rach, R., Abadyan, M., Theoretical modeling of the effect of Casimir attraction on the electrostatic instability of nanowire-fabricated actuators, 2015, Physica E: Low-Dimensional Systems and Nanostructures, 68, 149-158.
- **Farrokhhabadi, A.**, Mohammadi, B., Hosseini-Toudeshky, H., A simplified micromechanics model for predicting the stiffness degradation in symmetric composite laminates, 2015, Fatigue and Fracture of Engineering Materials and Structures, 38(11), 1334-1346.
- **Farrokhhabadi, A.**, Koochi, A., Abadyan, M., Modeling the instability of CNT tweezers using a continuum model, 2014, Microsystem Technologies, 20(2), 291-302.
- **Farrokhhabadi, A.**, Koochi, A., Kazemi, A., Abadyan, M., Effects of size-dependent elasticity on stability of nanotweezers, 2014, Applied Mathematics and Mechanics (English Edition), 35(12), 1573-1590.
- **Farrokhhabadi, A.**, Abadian, N., Rach, R., Abadyan, M., Theoretical modeling of the Casimir force-induced instability in freestanding nanowires with circular cross-section, 2014, Physica E: Low-Dimensional Systems and Nanostructures, 80, 63-67.
- **Farrokhhabadi, A.**, Rach, R., Abadyan, M., Modeling the static response and pull-in instability of CNT nanotweezers under the Coulomb and van der Waals attractions, 2013, Physica E: Low-Dimensional Systems and Nanostructures, 53, 137-145.
- **Farrokhhabadi, A.**, Hosseini-Toudeshky, H., Mohammadi, B., Development of a damage analysis method in laminated composites using finite fracture toughness of single lamina, 2013, Mechanics of Advanced Materials and Structures, 20, 177-188.
- Hosseini-Toudeshky, H., **Farrokhhabadi, A.**, Mohammadi, B., Implementation of a micro-meso approach for progressive damage analysis of composite laminates, 2012, Structural Engineering and Mechanics, 43, 657-678.
- Hosseini-Toudeshky, H., **Farrokhhabadi, A.**, Mohammadi, B., Consideration of concurrent transverse cracking and induced delamination propagation using a generalized micro-meso

approach and experimental validation, 2012, *Fatigue and Fracture of Engineering Materials and Structures*, 35, 885-901.

- Hosseini-Toudeshky, H., **Farrokhhabadi, A.**, Mohammadi, B., Analysis of damage events in quasi-isotropic laminates using a generalized micromechanics approach, 2011, *Procedia Engineering*, 10, 236-241.
- Hosseini-Toudeshky, H., **Farrokhhabadi, A.**, Mohammadi, B., Progressive damage analyses of composite laminates exhibiting free edge effects using a new micro-meso approach, 2011, *Key Engineering Materials*, 471-472, 263-267.
- Nademi, M., Mozaffari, A., **Farrokhhabadi, A.** A new self-healing method in composite laminates using the hollow glass fiber, 2011, *Key Engineering Materials*, 471-472, 548-551.
- **Farrokhhabadi, A.**, Hosseini-Toudeshky, H., Mohammadi, B., A generalized micromechanical approach for the analysis of transverse crack and induced delamination in composite laminates, 2011, *Composite Structures* 93,443-455.
- **Farrokhhabadi, A.**, Hosseini-Toudeshky, H., Mohammadi, B., Damage analysis of laminated composites using a new coupled micro-meso approach, 2010, *Fatigue and Fracture of Engineering Materials and Structures*, 33, 420-435.
- Hosseini-Toudeshky, H., **Farrokhhabadi, A.**, Mohammadi, B., Transverse crack density evolution in a single orthotropic lamina under multi-axial stresses using analytical method, 2009, *Procedia Engineering*, 1, 109-112.

PEER-REVIEWED CONFERENCE PAPERS

- The effect of staggered matrix crack induced delamination growth on the thermomechanical properties of cross-ply laminates, Rezaei S, **Farrokhhabadi, A.**, 23rd International Conference on Composite Structures 2020, Porto.
- Effect of voids distribution on the in situ strength of 90° ply using a numerical method, **Farrokhhabadi, A.**, Rafiee, A.R. ISME 2019, Tehran
- A New Energy-Based Failure Criterion to Predict the Onset of Matrix Cracking Induced Delamination in General Symmetric Laminates, Delbariani nejad, A. **Farrokhhabadi, A.**, 5th International Conference on Mechanics of Composites 2019, Lisbon.
- Investigation of matrix cracking formation in composite laminates under the bending loading, **Farrokhhabadi, A.**, Bahrami, M., The Biennial International Conference on Experimental Solid Mechanics (Xmech 2018), Tehran.
- Evaluation of matrix cracking formation in a cross-ply composite laminate under uniform tension load, **Farrokhhabadi, A.**, Madadi, HR., ISME 2017, Tehran.
- Evaluation of matrix cracking formation in cross-ply composite laminates under three point bending load using cohesive zone model, Farrokhhabadi, A, Madadi, HR, ICCS20, Paris 2017.
- Malekinejad, H., Rahimi, G.H, **Farrokhhabadi, A.**, Kamareh, F., Investigation of the separation between skin core of sandwich composite plates under bending loading, XMECH 2016, Iran.
- , Kamareh, F., Rahimi, G.H., **Farrokhhabadi, A.** Analysis Of Debonding in Composite Laminates with Lattice Stiffeners under Bending Loading Using the Cohesive Zone Model and ExperimentA, Malekinejad, H., XMECH 2016, Iran.

- Kamareh, F., Rahimi, G.H., **Farrokhhabadi**, A, Numerical and experimental investigation of debonding in composite laminates with lattice stiffeners under bending loading, ICCS19, Porto, 2016.
- **Farrokhhabadi**, A., Babaei, R., Investigation of transverse cracking and induced delamination formation in cross-ply open-hole composite laminates using a developed continuum damage mechanics model, ICCS19, Porto, 2016.
- **Farrokhhabadi**, A., Inelastic behavior prediction of laminated composites using a new micro-meso damage mechanics approach, The 9th Iranian Aerospace Society Conference, Iran.
- Hosseini Toudeshky, H., **Farrokhhabadi**, A. and Mohammadi, B., A new micro-meso approach to investigate matrix cracking induce delamination in laminated composites, proceeding of the meso 2010, 251-254.
- Hosseini Toudeshky, H., **Farrokhhabadi**, A. and Mohammadi, B., A micromechanical model for the analysis of matrix cracking in composite laminates under tri-axial loading and out of plane bending, 3rd International Conference on Composites: Characterization, Fabrication and Application (CCFA-3) , Iran, 2012.
- **Farrokhhabadi** A., Keypour Sangesari S., Analysis of embedded delamination growth in laminated composite using cohesive surface method, The 14th Iranian Aerospace Society Conference, 2015, Iran.
- **Farrokhhabadi** A., Taghavi S., A generalized model for initiation of formation microcracking and delamination in transverse cracked laminate with symmetric lay-ups, The 14th Iranian Aerospace Society Conference, 2015, Iran.