

---

[HOME](#) [HONOURS AND MEMBERSHIPS](#) [RESEARCH](#) [PUBLICATIONS](#) [TEACHING](#)

---



# M H FERRI ALIABADI

Faculty of Engineering, Department of Aeronautics

*Head of the Department of Aeronautics*

---

## SUMMARY

PROFESSOR OF AEROSTRUCTURES &  
ZAHAROFF PROFESSOR OF AVIATION

---

## ADMINISTRATIVE DUTIES

### HEAD OF DEPARTMENT

Prior to joining Imperial College in 2005, he was Professor of Computational Mechanics and the Director of Aerospace Engineering at Queen Mary, University of London (1997-2004) and Reader and Head of Damage Tolerance Division at WIT, Southampton (1987-1997).

---

## AFFILIATIONS

- > Aerospace Materials and Structures
- > Composites and Materials Innovation
- > Computational Methods and Mathematical Modelling
- > Computational Structural Mechanics
- > Multifunctional Materials, Smart and Micro Air Vehicles
- > Space Lab

---

## CONTACT

+44 (0)20 7594 5077

[Email](#)

---

## ASSISTANT

Miss Lisa Kelly

+44 (0)20 7594 5056

---

## LOCATION

E459

ACE Extension

South Kensington Campus

---

## LINKS

- > College Directory
- > Search College Directory
- > Faculty of Engineering
- > Department of Aeronautics
- > Expert Directory



# M H FERRI ALIABADI

Faculty of Engineering, Department of Aeronautics

*Head of the Department of Aeronautics*

## EXTERNAL POSITIONS

- Medals and Awards, Royal Aeronautical Society, 2013
- Editorial Board, [European Journal of Computational Mechanics](#), Taylor & Francis, 2013
- Editor in Chief, [Structural Integrity and Durability](#)
- Editor, [Journal of Multiscale Modelling](#)
- Member of Advisory Board, [International Journal for Numerical Methods in Engineering](#)
- Member of Editorial Board, [Computer Modelling in Engineering and Sciences](#)
- Editorial Board Member, [Journal of Strain Analysis](#)
- Editor in Chief, Computational and Experimental Methods in Structures, Imperial College Press
- Editor, [Electronic Journal of Boundary Elements](#)
- Editor in Chief, Advances in Fracture, WIT Press

## LINKS

- > [College Directory](#)
- > [Search College Directory](#)
- > [Faculty of Engineering](#)
- > [Department of Aeronautics](#)
- > [Expert Directory](#)

## CONTACT

+44 (0)20 7594 5077

[Email](#)

## ASSISTANT

Miss Lisa Kelly

+44 (0)20 7594 5056

## LOCATION

E459

ACE Extension

South Kensington Campus

## MEMBERSHIP OF PROFESSIONAL BODIES

- Fellow, Royal Aeronautical Society, 2010
- FIMA, Institute of Mathematics and its Applications

### Main campus address:

Imperial College London, South Kensington Campus, London SW7 2AZ, tel: +44 (0)20 7589 5111

[Campus maps and information](#) [About this site](#) [This site uses cookies](#) [Log in](#)



## M H FERRI ALIABADI

Faculty of Engineering, Department of Aeronautics

*Head of the Department of Aeronautics*

### OVERVIEW

Principal Investigator on recently external funded projects:

SHERLOC - Structural Health Monitoring, Manufacturing and Repair Technologies for Life Management of Composite Fuselage, Coordinator, JU Cleansky 2, 9.2M Euros (2015-2020)

SCOPE - Self-sensing Curved composite panel under Operational load: methodology Platform for prediction of damage Event- JTI Cleansky, PI, 400KEuros (2013-2015)

Smart Intelligent Aircraft Structures (SARISTU), EU, FP7 - PI, approx 1MEuros (2013-2015)

Multi-level Based Design and Optimisation Techniques for Stiffened Panel, Alenia, Finmeccanica, PI, 400KEuros, (2012-2014)

Smart Methodologies and Multilevel/Multiscale Analysis of Composite Stiffened Panel for Structural Health Monitoring, JTI Clean Sky, EU, PI, 420KEuros (2013-2014)

Three-dimensional multiscale model for material degradation and fracture in polycrystalline, EU, MCF 210KEuros (2011-2013)

Smart Technologies for Stress Free Travel, SEAT, EU Project, 3.2 MEuros ([WWW.SEAT-Project.Org](http://WWW.SEAT-Project.Org)) Coordinator.

Structural Adhesive Bonding of Thick Components for Advanced Engineering Design (SABCAD), TSB, PI, £342K

Innovative Fatigue and Damage Tolerance Methods for the Application of New Structural Concepts, DaTon, EU Project - PI, 150KEuros

Professor Aliabadi's research interests are in the areas of computational structural mechanics, Structural Health Monitoring, fracture mechanics and fatigue, multiscale modelling, and boundary, meshless and finite element methods. He has over five hundred papers in the above area, which include over two hundred and fifty journal publications and fifty authored or edited books. He has supervised close to fifty PhD students.

### CURRENT THEMES OF RESEARCH INCLUDE

- Computational Solid Mechanics

### AFFILIATIONS

- > Aerospace Materials and Structures
- > Composites and Materials Innovation
- > Computational Methods and Mathematical Modelling
- > Computational Structural Mechanics
- > Multifunctional Materials, Smart and Micro Air Vehicles
- > Space Lab

### LINKS

- > College Directory
- > Search College Directory
- > Faculty of Engineering
- > Department of Aeronautics
- > Expert Directory

### CONTACT

+44 (0)20 7594 5077

[Email](#)

### ASSISTANT

Miss Lisa Kelly

+44 (0)20 7594 5056

### LOCATION

E459

ACE Extension

South Kensington Campus

- Failure Analysis and Fracture Mechanics
- Multiscale Modelling
- Microstructural Modelling
- Smart Structures
- Boundary Element Method
- Meshless Methods
- Wear and Contact Mechanics
- Geometrically Nonlinear problems
- Plasticity and Creep
- Crack Growth Modelling
- Sensitivity Analysis and Optimisation
- Stochastic and Probabilistic Analysis
- Buckling of Thin-Walled Structures
- Multilayered Structures
- Structural Dynamic and Impact

## RESEARCH STAFF

---

Sharif Khodaei,Z

## RESEARCH STUDENT SUPERVISION

---

Salmanpour,M, Damage detection in composite materials using ultrasonic guided waves

Chen,B, Meshfree modeling of dynamic failure and fracture of 3D orthogonal woven composites

Zou,F, Structural Health Monitoring using Piezoelectric Transducers

Li,L, MeshFree methods for modelling woven composites

### Main campus address:

Imperial College London, South Kensington Campus, London SW7 2AZ, tel: +44 (0)20 7589 5111

[Campus maps and information](#) [About this site](#) [This site uses cookies](#) [Log in](#)



# M H FERRI ALIABADI

Faculty of Engineering, Department of Aeronautics

Head of the Department of Aeronautics

## PUBLICATIONS

280 results found

Search

FILTER

1 2 3 4 5 6 7 8 ... 10

### CONTACT

+44 (0)20 7594 5077

[Email](#)

### ASSISTANT

Miss Lisa Kelly

+44 (0)20 7594 5056

### LOCATION

E459

ACE Extension

South Kensington Campus

Geraci G, Aliabadi MH, 2017, [Micromechanical boundary element modelling of transgranular and intergranular cohesive cracking in polycrystalline materials](#), *ENGINEERING FRACTURE MECHANICS*, Vol: 176, Pages: 351-374, ISSN: 0013-7944

[Author Web Link](#) | [Cite](#)

JOURNAL ARTICLE

Lopez C, Bacarreza O, Baldomir A, et al., 2017, [Reliability-based design optimization of composite stiffened panels in post-buckling regime](#), *STRUCTURAL AND MULTIDISCIPLINARY OPTIMIZATION*, Vol: 55, Pages: 1121-1141, ISSN: 1615-147X

[Author Web Link](#) | [Open Access Link](#) | [Cite](#)

JOURNAL ARTICLE

Salmanpour MS, Khodaei ZS, Aliabadi MH, 2017, [Guided wave temperature correction methods in structural health monitoring](#), *JOURNAL OF INTELLIGENT MATERIAL SYSTEMS AND STRUCTURES*, Vol: 28, Pages: 604-618, ISSN: 1045-389X

[Author Web Link](#) | [Open Access Link](#) | [Cite](#) | CITATIONS: 3

JOURNAL ARTICLE

Salmanpour MS, Khodaei ZS, Aliabadi MH, 2017, [Transducer placement optimisation scheme for a delay and sum damage detection algorithm](#), *STRUCTURAL CONTROL & HEALTH MONITORING*, Vol: 24, ISSN: 1545-2255

[Author Web Link](#) | [Open Access Link](#) | [Cite](#) | CITATIONS: 2

JOURNAL ARTICLE

Salmanpour MS, Khodaei ZS, Aliabadi MH, 2017, [Instantaneous Baseline Damage Localization Using Sensor Mapping](#), *IEEE SENSORS JOURNAL*, Vol: 17, Pages: 295-301, ISSN: 1530-437X

[Author Web Link](#) | [Open Access Link](#) | [Cite](#)

JOURNAL ARTICLE

Salmanpour MS, Sharif Khodaei Z, Aliabadi MHF, 2017, [Impact Damage Localisation with Piezoelectric Sensors under Operational and Environmental Conditions.](#), *Sensors (Basel)*, Vol: 17

[Abstract](#) | [Author Web Link](#) | [Cite](#)

JOURNAL ARTICLE

Yeo WH, Purbolaksono J, Aliabadi MH, et al., 2017, [Exact solution for stresses/displacements in a multilayered hollow cylinder under thermo-mechanical loading](#), *INTERNATIONAL JOURNAL OF PRESSURE VESSELS AND PIPING*, Vol: 151, Pages: 45-53, ISSN: 0308-0161

[Author Web Link](#) | [Cite](#)

JOURNAL ARTICLE

Khodaei ZS, Aliabadi MH, 2016, [A Multi-Level Decision Fusion Strategy for Condition Based Maintenance of Composite Structures](#), *MATERIALS*, Vol: 9, ISSN: 1996-1944

[Author Web Link](#) | [Open Access Link](#) | [Cite](#)

JOURNAL ARTICLE

Li M, Tian YL, Wen PH, et al., 2016, [Anti-plane interfacial crack with functionally graded coating: static and dynamic](#), *THEORETICAL AND APPLIED FRACTURE MECHANICS*, Vol: 86, Pages: 250-259, ISSN: 0167-8442

[Author Web Link](#) | [Cite](#)

JOURNAL ARTICLE

Mallardo V, Khodaei ZS, Aliabadi FMH, 2016, [A Bayesian Approach for Sensor Optimisation in Impact Identification](#), *MATERIALS*, Vol: 9, ISSN: 1996-1944

[Author Web Link](#) | [Cite](#)

JOURNAL ARTICLE

Mallardo V, Sharif Khodaei Z, Aliabadi MH, 2016, [A bayesian approach for sensor optimisation in impact identification](#), *Materials*, Vol: 9, ISSN: 1996-1944

[Abstract](#) | [Open Access Link](#) | [Cite](#)

JOURNAL ARTICLE

Rodriguez-Tembleque L, Aliabadi MH, 2016, [Numerical simulation of fretting wear in fiber-reinforced composite materials](#), *ENGINEERING FRACTURE MECHANICS*, Vol: 168, Pages: 13-27, ISSN: 0013-7944

[Author Web Link](#) | [Cite](#)

JOURNAL ARTICLE

Rodriguez-Tembleque L, Buroni FC, Saez A, et al., 2016, [3D coupled multifield magneto-electro-elastic contact modelling](#), *INTERNATIONAL JOURNAL OF MECHANICAL SCIENCES*, Vol: 114, Pages: 35-51, ISSN: 0020-7403

[Author Web Link](#) | [Open Access Link](#) | [Cite](#)

JOURNAL ARTICLE

Rodriguez-Tembleque L, Saez A, Aliabadi MH, 2016, [Indentation response of piezoelectric films under frictional contact](#), *INTERNATIONAL JOURNAL OF ENGINEERING SCIENCE*, Vol: 107, Pages: 36-53, ISSN: 0020-7225

[Author Web Link](#) | [Open Access Link](#) | [Cite](#)

JOURNAL ARTICLE

Salmanpour MS, Khodaei ZS, Aliabadi MH, 2016, [Airborne Transducer Integrity under Operational Environment for Structural Health Monitoring](#), *SENSORS*, Vol: 16, ISSN: 1424-8220

[Author Web Link](#) | [Open Access Link](#) | [Cite](#)

JOURNAL ARTICLE

Thiene M, Khodaei ZS, Aliabadi MH, 2016, [Optimal sensor placement for maximum area coverage \(MAC\) for damage localization in composite structures](#), *SMART MATERIALS AND STRUCTURES*, Vol: 25, ISSN: 0964-1726

[Author Web Link](#) | [Open Access Link](#) | [Cite](#) | CITATIONS: 2

JOURNAL ARTICLE

Bacarreza O, Aliabadi MH, Apicella A, 2015, [Robust design and optimization of composite stiffened panels in post-buckling](#), *STRUCTURAL AND MULTIDISCIPLINARY OPTIMIZATION*, Vol: 51, Pages: 409-422, ISSN:

1615-147X

[Author Web Link](#) | [Open Access Link](#) | [Cite](#) | CITATIONS: 7

JOURNAL ARTICLE

Benedetti I, Aliabadi MH, 2015, [Multiscale modeling of polycrystalline materials: A boundary element approach to material degradation and fracture](#), *COMPUTER METHODS IN APPLIED MECHANICS AND ENGINEERING*, Vol: 289, Pages: 429-453, ISSN: 0045-7825

[Author Web Link](#) | [Cite](#) | CITATIONS: 5

JOURNAL ARTICLE

Di Pisa C, Aliabadi MH, 2015, [Boundary element analysis of stiffened panels with repair patches](#), *ENGINEERING ANALYSIS WITH BOUNDARY ELEMENTS*, Vol: 56, Pages: 162-175, ISSN: 0955-7997

[Author Web Link](#) | [Cite](#) | CITATIONS: 2

JOURNAL ARTICLE

Pineda-Leon E, Rodriguez-Castellanos A, Basaldua-Sanchez JE, et al., 2015, [Plastic, viscoplastic and creep fracture problems with the boundary element method](#), *FATIGUE & FRACTURE OF ENGINEERING MATERIALS & STRUCTURES*, Vol: 38, Pages: 40-55, ISSN: 8756-758X

[Author Web Link](#) | [Cite](#) | CITATIONS: 1

JOURNAL ARTICLE

Zou F, Aliabadi MH, 2015, [A boundary element method for detection of damages and self-diagnosis of transducers using electro-mechanical impedance](#), *SMART MATERIALS AND STRUCTURES*, Vol: 24, ISSN: 0964-1726

[Author Web Link](#) | [Cite](#) | CITATIONS: 2

JOURNAL ARTICLE

Huang X, Aliabadi MH, Khodaei ZS, 2014, [Fatigue Crack Growth Reliability Analysis by Stochastic Boundary Element Method](#), *CMES-COMPUTER MODELING IN ENGINEERING & SCIENCES*, Vol: 102, Pages: 291-330, ISSN: 1526-1492

[Author Web Link](#) | [Cite](#) | CITATIONS: 2

JOURNAL ARTICLE

Rodriguez-Tembleque L, Aliabadi MH, 2014, [Friction and Wear Modelling in Fiber-Reinforced Composites](#), *CMES-COMPUTER MODELING IN ENGINEERING & SCIENCES*, Vol: 102, Pages: 183-210, ISSN: 1526-1492

[Author Web Link](#) | [Cite](#)

JOURNAL ARTICLE

Sharif-Khodaei Z, Aliabadi MH, 2014, [Assessment of delay-and-sum algorithms for damage detection in aluminium and composite plates](#), *SMART MATERIALS AND STRUCTURES*, Vol: 23, ISSN: 0964-1726

[Author Web Link](#) | [Cite](#) | CITATIONS: 25

JOURNAL ARTICLE

Thiene M, Ghajari M, Galvanetto U, et al., 2014, [Effects of the transfer function evaluation on the impact force reconstruction with application to composite panels](#), *COMPOSITE STRUCTURES*, Vol: 114, Pages: 1-9, ISSN: 0263-8223

[Author Web Link](#) | [Cite](#) | CITATIONS: 8

JOURNAL ARTICLE

Zou F, Benedetti I, Aliabadi MH, 2014, [A boundary element model for structural health monitoring using piezoelectric transducers](#), *SMART MATERIALS AND STRUCTURES*, Vol: 23, ISSN: 0964-1726

[Author Web Link](#) | [Cite](#) | CITATIONS: 7

JOURNAL ARTICLE

Benedetti I, Aliabadi MH, 2013, [A three-dimensional grain boundary formulation for microstructural modeling of polycrystalline materials](#), *COMPUTATIONAL MATERIALS SCIENCE*, Vol: 67, Pages: 249-260, ISSN: 0927-0256

[Author Web Link](#) | [Cite](#) | CITATIONS: 19

JOURNAL ARTICLE

Benedetti I, Aliabadi MH, 2013, [A three-dimensional cohesive-frictional grain-boundary micromechanical model for intergranular degradation and failure in polycrystalline materials](#), *COMPUTER METHODS IN APPLIED MECHANICS AND ENGINEERING*, Vol: 265, Pages: 36-62, ISSN: 0045-7825

[Author Web Link](#) | [Cite](#) | CITATIONS: 25

JOURNAL ARTICLE

Di Pisa C, Aliabadi MH, 2013, [An efficient BEM formulation for analysis of bond-line cracks in thin walled aircraft structures](#), *INTERNATIONAL JOURNAL OF FRACTURE*, Vol: 179, Pages: 129-145, ISSN: 0376-9429

[Author Web Link](#) | [Cite](#) | CITATIONS: 3

JOURNAL ARTICLE

Di Pisa C, Aliabadi MH, 2013, [Fatigue crack growth analysis of assembled plate structures with dual boundary element method](#), *ENGINEERING FRACTURE MECHANICS*, Vol: 98, Pages: 200-213, ISSN: 0013-7944

[Author Web Link](#) | [Cite](#) | CITATIONS: 3

JOURNAL ARTICLE

[1](#) [2](#) [3](#) [4](#) [5](#) [6](#) [7](#) [8](#) ... [10](#)

This data is extracted from the Web of Science and reproduced under a licence from Thomson Reuters. You may not copy or re-distribute this data in whole or in part without the written consent of the Science business of Thomson Reuters.

**Main campus address:**

Imperial College London, South Kensington Campus, London SW7 2AZ, tel: +44 (0)20 7589 5111

[Campus maps and information](#) [About this site](#) [This site uses cookies](#) [Log in](#)





## M H FERRI ALIABADI

Faculty of Engineering, Department of Aeronautics

*Head of the Department of Aeronautics*

### COMPUTATIONAL MECHANICS - AE3-415

#### AIMS

- To introduce advanced concepts required for the application of the finite element method to the analysis of aerostructures.
- To introduce the basics of non-linear structural analysis and solution methods based on the finite element method.
- To introduce the Boundary Element Method for two-dimensional potential, elastostatic and acoustic problems.

#### ROLE

Lecturer

### STRUCTURAL MECHANICS AND DYNAMICS - AE2-213

#### AIMS

An earlier course A.110 Introduction to Structural Analysis is extended. This course aims to demonstrate the different ways in which stresses can be introduced into structures. Design against excessive deformation failure is examined through the analysis of a number of simple structural components. The course provides a basis for courses in aircraft structures, structural mechanics and Finite Elements Analysis which are met in the third and later years of the degree course. The concept of presenting structural problems in matrix form is given and the flexibility and stiffness matrices introduced. Free and forced vibration solutions for continuous and discrete systems are presented. Buckling of perfect and imperfect struts is described.

#### ROLE

Lecturer

#### Main campus address:

Imperial College London, South Kensington Campus, London SW7 2AZ, tel: +44 (0)20 7589 5111

[Campus maps and information](#) [About this site](#) [This site uses cookies](#) [Log in](#)

#### LINKS

- > [College Directory](#)
- > [Search College Directory](#)
- > [Faculty of Engineering](#)
- > [Department of Aeronautics](#)
- > [Expert Directory](#)

#### E-LEARNING

- > [e-Learning](#)

#### CONTACT

+44 (0)20 7594 5077

[Email](#)

#### ASSISTANT

Miss Lisa Kelly

+44 (0)20 7594 5056

#### LOCATION

E459

ACE Extension

South Kensington Campus