MOHAMMADMAHDI ABDOLLAHZADEHSANGROUDI

CONTACT INFORMATION

Name: **Mohammad Mahdi Abdollahzadeh**
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PERSONAL DATA

Date of birth: **27.02.86**
Place of birth: **Babol, Mazandaran, Iran**
Nationality: **Iranian**
Civil status: **Single**

EDUCATION

PhD student in Mechanical Engineering (Sep 2011-till now)
University of Beira Interior,
Department of Electromechanical Engineering, Center for Aerospace Sciences and Technology Covilhã, Portugal

Dissertation title: **"Development of the numerical models for DBD plasma actuators for flow control of propulsive systems"**
Advisor: **Prof. Jose Pascoa**

M.S in Energy Engineering (August 2011)
Babol University of Technology,
School of Mechanical in Engineering, Thermofluids Mechanics department, Babol, Iran

Dissertation title: **"Two Dimensional Numerical Simulations of Different Gas Flow Channels in PEM Fuel Cell, 2008-2011"**
Advisor: **Prof. Ali Akbar Ranjbar**
(GPA=18.68/20); Ranked 1st in class of 22 students

B.S. in Thermofluids Engineering (July 2008)
Babol University of Technology,
School of Mechanical in Engineering, Thermofluids Mechanics department, Babol, Iran

Thesis Title: "**Investigation on Exact and approximate analytical methods to solve nonlinear wave equation arising in Fluid Mechanics, 2004-2008**"
Advisor: **Dr. Davood Domiri Ganji**

(GPA=16.38/20); Ranked 1st in class of 68 students

ACADEMIC HONORS

- ✓ Outstanding B.Sc. student award , Thermofluids Mechanics Department, 2005 – 2006
- ✓ Outstanding B.Sc. student award , Thermofluids Mechanics Department, 2006 – 2007
- ✓ Outstanding B.Sc. student award ,Thermofluids Mechanics Department, 2007 – 2008
- ✓ Top B.Sc. (**first ranked**) student ,Thermofluids Mechanics Department , (2004-2008)
- ✓ Outstanding M.Sc. student award , Thermofluids Mechanics Department, 2008–2009
- ✓ Top M.Sc. (**first ranked**) student ,Thermofluids Mechanics Department, (2008-2011)

RESEARCH INTERESTS *(not limited to)*

- Computational fluid dynamics (CFD) and advanced modeling
- Two phase Flow Simulation (Fuel Cells, porous media)
- Energy Storage Systems and phase change materials
- Heat transfer characteristics of Nanofluids
- Electrochemistry
- Electro-hydrodynamic and plasma discharges

JOURNAL & CONFERENCE ARTICLES [Journal Impact Factor]

1. **M Abdollahzadeh**, JC Páscoa, PJ Oliveira, Two-dimensional numerical modeling of interaction of micro-shock wave generated by nanosecond plasma actuators and transonic flow, Journal of Computational and Applied Mathematics, 2014, 270, 401-416 [0.99]

2. **M Abdollahzadeh**, JC Páscoa, PJ Oliveira, Modified Split-Potential Model for Modeling the Effect of DBD Plasma Actuators in High Altitude Flow Control, Current Applied Physics, DOI: 10.1016/j.cap.2014.05.016 [1.81]

3. SS Das, **M Abdollahzadeh**, JC Pascoa, A Dumas, M Trancossi, Numerical modeling of coanda effect in a novel propulsive system, The International Journal of Multiphysics, 2014, 8 (2), 181-202

4. **M Abdollahzadeh**, JC Pascoa, AA Ranjbar, Q Esmaili, Analysis of PEM (Polymer Electrolyte Membrane) fuel cell cathode two-dimensional modeling, Energy, 2014, 68, 478-494 [3.65]

5. **M Abdollahzadeh**, J Páscoa, PJ Oliveira, Two dimensional numerical modelling of micro-shock wave creation in nanosecond plasma actuators, FEMTEC 4th International Congress on Computational Engineering and Sciences, 2013

6. Q. Esmaili, A.A. Ranjbar, **M. Abdollahzadeh**, Numerical Simulation of Direct Methanol Fuel cell Through a 1D+1D Approach, International journal of green energy, 2013, 10 (2), 190-204 [2.07]

7. **M. Abdollahzadeh**, A.A. Ranjbar, Q. Esmaili, (1D+1D) Approach Mathematical Modeling of Two Phase Multicomponent Transport Flow in PEMFC, Russian journal of electrochemistry, 2012, vol. 48, no12, pp. 1187-1196 [0.5]

8. S. Kashani, A.A. Ranjbar, **M. Abdollahzadeh**, S. Sebti, , Solidification of nano-enhanced phase change material (NEPCM) in a wavy cavity, Heat and Mass Transfer 48 (7), 1155-1166 [0.84]

9. M. Esmaeilpour, **M. Abdollahzadeh**, Free Convection and Entropy Generation of Nanofluid inside an Enclosure with Different patterns of Vertical Wavy Walls, International Journal of Thermal Sciences 52 (2012) 127-136 [2.47]

10. M. Rahimi, A.A. Ranjbar, M.J. Hosseini, **M. Abdollahzadeh**, Natural Convection of Nanoparticle-Water Mixture (Nanofluid) Near Waters Density Inversion in a Rectangular Enclosure, International journal of communication in heat and mass transfer, International Communications in Heat and Mass Transfer 39 (2012) 131–137 [2.21]

11. **M Abdollahzadeh**, J Páscoa, PJ Oliveira. , Oliveira P.J. (2012), "numerical investigation on efficiency increase in high altitude propulsion systems using plasma actuators", ECCOMAS 2012 - European Congress on Computational Methods in Applied Sciences and Engineering, e-Book Full Papers, pp. 6563-6581

12. **M Abdollahzadeh**, J Páscoa, PJ Oliveira, "Numerical Modeling of Boundary Layer Control Using Dielectric Barrier Discharge", in Proc. Conferência Nacional em Mecânica dos Fluidos, Termodinâmica e Energia MEFTE 2012, Paper No 61, pp. 110.

13. BS Bahrami, H Abdollahzadeh, IM Berijani, DD Ganji, M Abdollahzadeh, Exact travelling solutions for some nonlinear physical models by (G'/G)-expansion method, Pramana 77 (2), 263-275 [0.56]

14. D.D. Ganji, **M. Abdollahzadeh**, Exact travelling solutions for the Lax' s seventh-order KdV equation by sech method and rational exp-function method, Applied Mathematics and Computation 206 (2008) 38–444 [1.35]

15. D.D. Ganji, **M. Abdollahzadeh**, Exact traveling solutions of some nonlinear evolution equation by (*G'/G*)-expansion method, Journal of Mathematical Physics **50**, 013519 (2009); doi:10.1063/1.3052847 [1.30]

16. M. Barzegar, M. Hosseinalipoor, **M. Abdollahzadeh**, Numerical study on Heat Reduction over Blunt Body with Aerodisk/Aerospike, Presented at 12th Conference on Fluid Dynamics, Babol university of technology, Iran, April 28-30, 2009.

17. **M. Abdollahzadeh**, A.A. Ranjbar, Q. Esmaili, M. Shateri, Quasi Two Dimensional (1D+1D)

modeling of two Phase Flow in PEM Fuel , 19th Annual Conference on Mechanical Engineering (ISME2011) , Faculty of Engineering, Birjand University ,May 2011 , (*In Persian*)

18. **M. Abdollahzadeh**, A.A. Ranjbar, Q. Esmaili, M. Shateri, Quasi Two Dimensional Modeling of Multi-Component Two Phase Flow in PEM Fuel Cathode, the First Annual Clean Energy Conference on International Center for Science and High Technology & Environmental Sciences, Kerman, Iran, February 23-24, 2010. (*In Persian*)

19. M. Hosseinalipoor, M. Barzegar, **M. Abdollahzadeh,** Numerical Modeling of Hypersonic Flow over Large Angle Blunt Cone with Aerospike at Mach 5.75, 8th Conference of Iranian Aerospace Society, ShahinShahr ,Iran, 2010

Journal Referee

- International Journal of Heat and Mass Transfer
- Journal of Mechanical Science and Technology
- International Journal of Energy Research
- Applied Thermal Engineering
- Applied Mathematical Modelling
- Scientia Iranica

TEACHING EXPERIENCE

- Teacher Assistant of Dr. Ali Akbar Ranjbar in Fluid Mechanics Laboratory of Babol University of Technology. (2009-2011)
- Lecturer of Fluid Mechanics Laboratory of Babol University of Technology. (2009-2011)
- Teacher Assistant of Dr. Davood Domiri Ganji in Heat transfer Laboratory of Babol University of Technology. (2008-2009)
- Teacher Assistant of Dr. Davood Domiri Ganji in teaching "Fluid mechanics I ",Babol University of Technology ,(summer 2007)
- Teacher Assistant of in Mr. Alimohammadi in teaching "Differential Equations", Babol University of Technology ,(summer 2007)

PROFESSIONAL MEMBERSHIPS

❖ Member of student executive committee, 12th Conference on Fluid Dynamics, Babol University of technology, Iran, April 28-30, 2009.

❖ Member of Iranian Elite National Foundation, The most prestigious academic honor society in the country.

❖ Member of Editorial Board of International Journal of Physics and Mathematical Sciences (JPMS)

COMPUTER SKILLS

- Programming languages (MATLAB / FORTRAN / C)
- OpenFoam
- Commercial fluid dynamic software (GAMBIT/pointwise/ FLUENT)
- Mathematical software's (Maple / Mathematica)
- Latex , Microsoft Office , Tec plot , PhotoShop
- MSDOS, Windows 95/98/NT, Windows Xp/7 O.S., Linux

ENGLISH LANGUAGE PROFICIENCY

Academic IELTS Band Score: 7

Listening: 7 Reading: 7.5 Writing: 6 Speaking: 7

REFERENCES

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