

Curriculum vitae

Personal information

Surname(s) / First name(s)

KARAC, Aleksandar

Address(es)

Fakultetska 3, 72000 ZENICA, Bosnia and Herzegovina

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akarac@unze.ba, akarac@ptf.unze.ba

Nationality

Bosnia-Herzegovina

Date of birth

April 13, 1971

Gender

male

Marital status

married

Children

daughter, son

Work experience

Dates

Mar 2015– present

Occupation or position held

Vice-rector for Science and Research

Name and address of employer

University of Zenica, Fakultetska 3, 72000 Zenica, Bosnia and Herzegovina

Dates

Feb 2015 – present

Occupation or position held

Full-time professor

Main activities and responsibilities

teaching, managing final year projects, master and doctoral students, consultancy work

Name and address of employer

University of Zenica, Faculty of Mechanical Engineering, Fakultetska 1, 72000 Zenica, Bosnia and Herzegovina

Dates

Juli 2013– Januar 2014.

Occupation or position held

Vice-dean for Teaching and Student affairs

Name and address of employer

University of Zenica, Faculty of Mechanical Engineering, Fakultetska 1, 72000 Zenica, Bosnia and Herzegovina

Dates

April 2009 – present

Occupation or position held

Associate professor

Main activities and responsibilities

teaching, managing final year projects, master and doctoral students, consultancy work

Name and address of employer

University of Zenica, Faculty of Mechanical Engineering, Fakultetska 1, 72000 Zenica, Bosnia and Herzegovina

Dates

September 2003 – April 2009

Occupation or position held

Lecturer

Main activities and responsibilities

teaching, managing final year projects, consultancy work

Name and address of employer

University of Zenica, Faculty of Mechanical Engineering, Fakultetska 1, 72000 Zenica, Bosnia and Herzegovina

Dates

April 1999 – September 2003

Occupation or position held

Teaching assistant in Fundamentals of Machine Design

Main activities and responsibilities

Teaching assistant in Fundamentals of Machine Design, tutoring

Name and address of employer

University of Zenica, Fakultetska 1, 72000 Zenica, Bosnia and Herzegovina

Dates

May 1998 – April 1999

Occupation or position held

Control engineer

Main activities and responsibilities

Name and address of employer

Controlling manufacturing process, preparing technical documentation

"METALNO" Zenica, Sarajevska 364, Zenica, Bosnia and Herzegovina

Education and training

Dates

May 2009 – present

Occupation or position held

Senior Postdoctoral Research Fellow in project: *Science and Engineering of Advanced Composites*

Main activities and responsibilities

Development of Finite Volume based procedures for characterisation of adhesives and adhesively bonded joints, co-supervision of PhD projects

Name of organisation

University College Dublin, School of Electrical, Electronic and Mechanical Engineering, Dublin, Ireland

Dates

November 2007 – May 2009

Occupation or position held

Senior Postdoctoral Research associate in project: *Towards better understanding and predicting blast trauma to human lungs: combined experimental-numerical study*

Main activities and responsibilities

Development of Finite Volume based procedures for impact phenomena, co-supervision of PhD projects

Name of organisation

University College Dublin, School of Electrical, Electronic and Mechanical Engineering, Dublin, Ireland

Dates

November 2004 – March 2007

Occupation or position held

Postdoctoral Research associate in project: *Towards Early Diagnosis of Atherosclerosis: A Novel Combined Numerical/Experimental Investigation*

Main activities and responsibilities

Development of Finite Volume based fluid-structure interaction procedures, co-supervision of PhD projects

Name of organisation

University College Dublin, School of Electrical, Electronic and Mechanical Engineering, Dublin, Ireland

Dates

October 1999 – Jun 2003

Title of qualification awarded

PhD in Mechanical Engineering

Principal subjects/Occupational skills covered

Computational continuum mechanics (Finite Volume Method), testing plastic products, testing plastic materials, fluid-structure interaction simulations

Name of organisation

Imperial College London, Mechanical Engineering Department

Dates

October 1992 – March 1998

Title of qualification awarded

MEng

Principal subjects/Occupational skills covered

Mechanical engineering in metallurgy, numerical simulations of fluid flows

Name of organisation

University of Zenica, Faculty of Mechanical Engineering

Foreign languages

Self-assessment

English

German

Understanding				Speaking				Writing	
Listening		Reading		Spoken interaction		Spoken production			
C2	Proficient user	C2	Proficient user	C2	Proficient user	C2	Proficient user	C2	Proficient user
A1	Basic user	A1	Basic user	A1	Basic user	A1	Basic user	A1	Basic user

Additional information

Areas of Scientific Interest

- Application of numerical methods in engineering
- Development of Finite Volume Method for multi-physics problems (fluid-structure interaction procedures: drop impact of fluid-filled containers, atherosclerosis, blood flow problems; problems with crack propagation: adhesively-bonded joints, diamonds, asphalt; other: impact resistance of internal organs, contact analysis, thermal analysis, biomechanical problems)
- Measuring fracture properties of polymeric materials, adhesives, diamonds
- High expertise in C++ programming, OpenFOAM application developments (C++ library of tools for computational continuum mechanics), MathCAD, numerical methods, Linux and Windows operating systems

Awards

- A school representative and winner of town and regional competitions in Mathematics and Physics (1984-1990)
- Awarded scholarships by WUS Atria, Soros, and "METALNO" Zenica at Mechanical Engineering Faculty of Zenica (1994-1998)
- Awarded a scholarship by British Petroleum at Imperial College London (1999-2003)
- Overseas Research Students award granted by the University of London (2000-2002)

Publications

- 1 monograph
- 3 text-books
- 18 peer-reviewed journal papers
- 74 conference papers
- 8 research projects

Supervision/co-supervision

- 12 PhD students
- 3 MSc students
- 14 final year students