

## Europass Curriculum Vitae



### ***Personal information***

***First name and Surname*** **Ali Bakouei**

***Address***

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***Nationality*** Iranian

***Date of birth*** 21 Mar 1966

***Gender*** male

### ***Education and training***

***Date*** **1999-2004**

***Title of qualification awarded*** PhD. in Nuclear physics and elementary particles

***Name and type of organisation providing education and training*** Faculty of Physics, Moscow state university, Moscow, Russia

***PhD. Thesis*** Backscattered Proton Spectrometry as a Method for Investigating Surface Layer Modification Processes in Materials

***Date*** **1991-1994**

***Title of qualification awarded*** M.Sc., in Nuclear Physics

***Name and type of organisation providing education and training*** Physics Department, Faculty of Sciences, Tehran University, Tehran, I.R. Iran

***Master Thesis*** Calculation of Energy Distribution in Boron Neutron Capture Therapy for Brain Tumors using the Monte Carlo Method

<b>Date</b>	<b>1985-1990</b>
<b>Title of qualification awarded</b>	<b>B.Sc., in Physics</b>
<b>Name and type of organisation providing education and training</b>	Physics Department, Faculty of Sciences, Amirkabir University of Technology, Tehran, I.R. Iran
<b>Personal skills and competences</b>	
<b>Field of Interest</b>	Nanotechnology – Supercapacitors –Quantum Technology- Hydrogen production battery
<b>Social skills and competences</b>	<i>Problem Solving, Leader,, Flexible, Team Player</i>
<b>Mother tongue(s)</b>	<b>Persian (Farsi)</b>
<b>Other language(s)</b>	<b>Russian- English- Arabic</b>
<b>Self-assessment</b>	
<b>European level</b>	
<b>Russian</b>	
<b>English</b>	
<b>Arabic</b>	
<b>Executive Records</b>	<p>Head of Physics Department, Islamic Azad University, Nur Branch, 1994-1995</p> <p>Vice Dean for Education and Research, Faculty of Science, University of Mohaghegh Ardabili (~3 years), 2004-2006</p> <p>Member of the University Educational Council, University of Mohaghegh Ardabili, 2004-2006.</p> <p>Member of the University Graduate Studies Council, University of Mohaghegh Ardabili, 2004-2005.</p> <p>Member of the University Evaluation and Monitoring Council, University of Mohaghegh Ardabili, 2004-2005</p> <p>Member of the University Disciplinary Appeals Committee, University of Mohaghegh Ardabili, 2004-2005</p> <p>Scientific Deputy and Supervisor of Iranian Students in Russia, Belarus, and Central Asia, 2007-2010</p> <p>Scientific Deputy and Supervisor of Iranian Students in Belarus and Ukraine, 2010-2014</p>

Faculty Member, Tarbiat Modares University, 2012 - Present

Head of Atomic and Molecular Physics Department, Tarbiat Modares University, 2015 - Present

Chairman of Physics Department, Tarbiat Modares University, 2015 - Present

Dean of Tarbiat Modares University Campus 2021-present

### ***Educational records***

Lecturer, Islamic Azad University, Qom Branch, 1992-1998

Full-time Professor, Islamic Azad University, Nowshahr-Chalus Branch, 1995

Full-time Professor, Islamic Azad University, Nur Branch, 1996-1999

Faculty Member, University of Mohaghegh Ardabili, 2004-2012

Faculty Member, Tarbiat Modares University, 2012 - Present

Teaching a wide range of undergraduate and graduate courses in Physics and Nuclear Specialization and Advanced Quantum

### ***Other Scientific-Executive***

#### ***Activities***

Executive Secretary of the International Conference "Agriculture and Natural Resources of Iran and Russia," St. Petersburg, Russia 2009

Scientific Committee Member, International Conference "Novel Applications of Nanotechnology," Minsk, April 2012

Executive Secretary, 1st International Conference "Novel Applications of Nanotechnology," Minsk, April 2012

Executive Secretary, 2nd International Conference "Novel Applications of Nanotechnology," Minsk, May 2015

Scientific Committee Member, International Conference "Actual Problems of Solid State Physics," Minsk, 2016

Member of the International Association of Alumni of Russian Universities in Belarus

**Award:** The only Iranian recipient of the High Medal of the National Academy of Sciences of Belarus

### ***Research Activities***

## **Books (Author/Translator)**

Author of a five-volume series: "Introduction to the Education System of the Russian Federation

Author: "Nuclear Energy: What Everyone Should Know," Elias Publications, Tehran, 2009.

Co-author: "Dictionary of New Persian-Russian Words," Rodomino Publications, Moscow, 2010

Translator (from English): "Fundamentals of Nuclear Reactors" (Ready for Publication)

Translator (from Russian): "Nanotechnology for Everyone" (Ready for Publication)

## **Papers**

Application of proton NBS spectrometry for definition of stoichiometry of two-component compounds

Investigation of erosion treatment of heat-resistant nickel alloys by ion scattering spectrometry and X-ray analysis

Study of Fe and Ti thermodiffusion nitriding by proton nuclear backscattering spectrometry and X-ray analysis

Study of thermal diffusion nitriding of titanium using methods of NBS proton spectrometry and X-ray diffraction analysis

Measurement of thickness and electro-physical parameters of dielectric and metallic thin films by optical and microwave methods

Physical Properties of Hot Wall Deposited  $\text{Sn}_{1-x}\text{Pb}_x\text{S}$  Thin Films

Flexible  $\text{Cu}(\text{In},\text{Ga})\text{Se}_2$  Solar Cells with  $\text{In}_2\text{S}_3$  Buffer Layer

Hollow Nanostructured Copper Cobalt Spinel Microspheres as an Advanced Material for Supercapacitors

Self-templated synthesis of uniform nanoporous  $\text{CuCo}_2\text{O}_4$  double-shelled hollow microspheres for high-performance asymmetric supercapacitors (Published in *ChemComm*)

The study of electric erosion treatments of Ni-superalloys by ion-scattering spectrometry and X-ray analysis

Using the method of NBS proton spectrometry to study iron nitriding initial stage

STUDY OF TiN COATINGS BY THE METHODS OF RUTHERFORD AND NUCLEAR BACKSCATTERING

Study of FeN Coating by the Methods of Rutherford and Nuclear Proton Backscattering

Measurement of the parameters of nanometer films by optical and microwave methods

$\text{SnS-PbS}$  Nanorod for Thermoelectric Application

Investigation of photoelectrochemical properties of  $\text{WO}_x$  thin films for photoelectrochemical water splitting application

Hydrothermal synthesis of hematite nanostructures for photoelectrochemical water splitting

Synthesis and electrochemical supercapacitive performance of copper cobalt spinel hollow spheres

Investigation of the structure and chemical properties of titanium nitride coatings using methods of backscattered proton nuclear spectroscopy and X-rays

Investigation of nitrogen distribution in iron nitride coatings using backscattered proton nuclear spectrometry

Synthesis of ZnO semiconductor nanoparticles via sol-gel method and investigation of their optical and structural properties  
multilayered film electromagnetic screens in space equipment  
Investigation of the effect of thermal modification on the photoelectrochemical performance of hydrothermally grown iron oxide (hematite) nanorods

### ***Research Projects***

Measurement of radioactivity in potato crops in Ardabil city  
Preparation of ZnO thin films by sol-gel methods and investigation of their optical properties  
Simultaneous measurement of the thickness of two nanolayers on insulating materials.  
Measurement of soil moisture using electromagnetic waves  
Feasibility study for the design and construction of an electron induction accelerator.

### ***Other***

Research activities at Saratov State University, Russia

### ***Student Projects***

Experimental investigation of single-photon generation capability in boron nitride thin films  
Effect of defect on performance of perovskite based light emitting diodes  
Experimental characterization of turbulent optical parameters  
Investigation of Halogen role in the halide perovskite structure and its effect on perovskite solar cell photovoltaic parameters  
Preparation of nanostructure thin film and investigation of the effect of the effect of titanium doped on its optical properties  
Simulation and Optimization of Alkaline Water Electrolysis Performance Using Carbon-Based Nanofluids  
Irradiation of silicone elastomer surface using laser and checking the physical properties of the surface and cell adhesion to it

Random Raman laser of Rhodamine 6 G with morphology effect of ZnO microstructures

ITO nanostructure thin film by sol-gel method for optical modulator

The Investigation of Quantum Coherency and behavior in Quantum Phase Transition

Investigation of photocatalytic properties of  $\text{WO}_3$  inverse opal nanostructures on graphene for photoelectrochemical water splitting.

Fabrication and characterization of anode electrode based on Ni-Fe nanostructures enhanced with metal additives to split water and produce hydrogen

Theoretical calculations the effects of local surface plasmon resonance of nobel metals according to the addition of  $\text{TiO}_2$  for photocatalyst production

Study and investigation of the propagation of Lager-Gaussian laser beams in turbulent atmospheres

Nano composite Synthesis based on Graphene Oxide for supercapacitor electrode Fabrication

The effect of graphene deposition on hematite ( $\alpha\text{-Fe}_2\text{O}_3$ ) for efficient photoelectrochemical water splitting

Investigating the role of halogen change in halide perovskite structure and its effect on perovskite solar cell parameters