Hiqmet Kamberaj

Date of birth: 07/09/1972   **Nationality:** Albanian/citizen of the Republic of North Macedonia | **Gender:** Male |

Phone number: (+389) 71325022 (Home) | **Email address:** h.kamberaj@gmail.com |

Website: http://hkamberajibu.wikidot.com   **LinkedIn:** https://www.linkedin.com/in/hiqmet-kamberaj-5299a323/

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Address: Metodija Mitevski 12/4-3, 1000, Skopje, North Macedonia (Home)

ABOUT ME

My full name is Hiqmet Kamberaj. I am a Professor at International Balkan University, Skopje, North Macedonia. I was an Acting Dean of the Faculty of Engineering from January 2017 to September 2019. I have published over 90 articles and book chapters in reputed journals and served as editor-in-chief, editorial board member, and ad-hoc reviewer of repute.

I have authored seven books published by internationally recognised publishing houses, such as De Gruyter, Springer Nature, and Lambert Academic Publishing.

My research focuses on understanding macromolecular systems' structure, dynamics, and thermodynamics using the laws of physics, biochemistry, applied mathematics, and machine learning approaches. I have participated in more than 40 international conferences presenting his work.

EDUCATION AND TRAINING

First (BSc, BA), Second (MSc, MA, MPHIL), and Third Cycles (PHD):

01/09/1990 – 01/07/1996 Tirana, Albania
BSC+MSC (DIPLOM – 300 ECTS) University of Tirana

Website www.fshn.edu.al

01/10/1997 – 15/02/2000 Siegen, Germany
MSC University of Siegen

Website www.uni-siegen.de

15/02/2000-31/08/2001 Frankfurt am Main, Germany
Postgraduate Student, Max-Planck Institute of Biophysics, Frankfurt am Main, Germany

Website www.mpg.de

01/09/2001 – 01/09/2003 Coventry, United Kingdom
MPHIL Coventry University

Website www.coventry.ac.uk

01/09/2001 – 15/05/2005 Manchester, United Kingdom
PHD Manchester Metropolitan University

Website www.mmu.ac.uk

Post-Doctoral Training:

01/01/2005 – 31/12/2005 Manchester, United Kingdom
POST-DOCTORAL Manchester Metropolitan University

Website www.mmu.ac.uk

01/01/2006 – 15/06/2006 Edmonton, Canada
POST-DOCTORAL National Institute of nanotechnology

Website www.ualberta.ca/facilities/national-institute-of-nanotechnology.html

01/09/2006 – 12/09/2008 Tempe, United States
POST-DOCTORAL State University of Arizona

Website www.asu.edu

13/09/2008 – 12/09/2009 Minneapolis, United States
POST-DOCTORAL University of Minnesota

Website twin-cities.umn.edu

01/08/2014 – 15/09/2014 Tampa, United States
VISITING SCHOLAR RESEARCHER University of South Florida

Website https://avandervaart.weebly.com/

WORK EXPERIENCE

01/09/1996 – 30/09/1997 Tirana, Albania
TEACHING ASSISTANT UNIVERSITY OF TIRANA

- teaching assistant of Electrodynamics
- teaching assistant of Optics
- teaching assistant of Statistical Physics

01/09/2001 – 01/09/2003 Coventry, United Kingdom
TEACHING ASSISTANT IN UNIVERSITIES UNIVERSITY OF COVENTRY

- teaching assistant of Java Programming (for Long-Life Learning Students)

- teaching assistant at the Students Help Centre

01/09/2003 – 31/12/2004 Manchester, United Kingdom
TEACHING ASSISTANT IN UNIVERSITIES MANCHESTER METROPOLITAN UNIVERSITY

- teaching assistant for Computer Skills (Microsoft Office)

- teaching assistant for Computer Programming (Delphi)
- teaching assistant for Discrete Mathematics

01/01/2005 – 31/12/2005 Manchester, United Kingdom
ASSISTANT LECTURER IN UNIVERSITY MANCHESTER METROPOLITAN UNIVERSITY

- teaching assistant for Computer Skills (Microsoft Office)
- teaching assistant for Computer Programming (Delphi)
- teaching assistant for Discrete Mathematics

23/09/2009 – 01/04/2014 1000, Skopje, North Macedonia
ASSISTANT PROFESSOR INTERNATIONAL BALKAN UNIVERSITY (First Cycle)

- Computer Programming
- Algorithms
- Probability and Statistics
- Physics

01/10/2009 – 01/04/2014, Tetovo, North Macedonia
ADJUNCT ASSISTANT PROFESSOR STATE UNIVERSITY OF TETOVO (First Cycle)

- Electrodynamics
- Classical Mechanics
- Statistical Physics
- Medical Physics

02/04/2014 – 04/04/2020, Skopje, North Macedonia
ASSOCIATE PROFESSOR INTERNATIONAL BALKAN UNIVERSITY (First and Second Cycles)

- Computer Programming
- Algorithms
- Discrete Mathematics
- Discrete Computational Structures
- Physics
- Optics
- System Modelling
- Information Theory (Second Cycle)
- Theory of Probability (Second Cycle)

02/04/2014 – 04/04/2020, Tetovo, North Macedonia
ADJUNCT ASSOCIATE PROFESSOR STATE UNIVERSITY OF TETOVO (Second Cycle)

- Theoretical Methods in Physics

05/04/2020 – CURRENT, Skopje, North Macedonia
FULL PROFESSOR INTERNATIONAL BALKAN UNIVERSITY (First, Second, and Third Cycles)

- Physics
- Optics
- Algorithms
- Discrete Computational Structures
- Discrete Mathematics
- Computer Graphics
- Information Theory (Second Cycle)
- Theory of Probability (Second Cycle)
- Implementation of Database Management Systems (Third Cycle)
- Scientific Programming (Third Cycle)

05/04/2020 – CURRENT, Tetovo, North Macedonia
ADJUNCT FULL PROFESSOR STATE UNIVERSITY OF TETOVO (Second Cycle)

- Theoretical Methods in Physics

LANGUAGE SKILLS

Mother tongue(s):	**ALBANIAN**				
Other language(s):					
	UNDERSTANDING		**SPEAKING**		**WRITING**
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C2	C2	C2	C2	C2
GERMAN	A2	B1	A2	A1	A2
ITALIAN	B2	B2	B2	B2	B2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

DIGITAL SKILLS

Microsoft Office | Google Drive | Outlook | Zoom | Microsoft PowerPoint | Microsoft Excel | Microsoft Word | Latex | Exam.net | Google Classroom | Matlab | Mathematica | FORTRAN, C/C++, Python, Java, PHP, HTML, Perl, awk, Shell Scripting, and Machine Learning Codes | CHARMM Software (Chemistry at Harvard Macromolecular Mechanics) | VMD (Visual Molecular Dynamics) program | NAMD | Gromacs | CPMD software

COMMUNICATION AND INTERPERSONAL SKILLS

Active listening | Impression Management Skills | Keeping a Positive Relational Dynamics Skills | Management of Efficiency in Different Professional Contexts | Professional Interaction Skills | Dynamic and a Range Learning Skills

JOB RELATED SKILLS

Coaching Skills | Mentorship Skills | Academic Writing Skills | Research Skills | Imagination Skills | Hard Working Skills | Working Under Pressure | Working Creatively Using Technology | Teaching with Technology | Technical Skills

ORGANISATIONAL SKILLS

Editorial/Reviewer Board Member

Editor-in-chief

Editorial Board Members

Ad-hoc Reviewer, Reviewer

Workshop/Conference Organiser

Co-chair of the Scientific Committee, Second Conference of National Institute of Physics, Academy of Sciences of Albania, 28-29 April 2023

Primary organiser, Workshop on Computer Simulations of Macromolecular Systems, International Balkan University, 3-4 June 2021, Skopje, R. of North Macedonia

Associate Organizer, International Conference on Advances in Material Science 2020, October 3, 2020, India.

Others

Student Evaluation Committee Member at International Balkan University (5 years), Skopje, North Macedonia – Preparation of Student Evaluation Reports

Staff Self-Evaluation Committee Member at International Balkan University (5 years), Skopje, North Macedonia – Preparation of Faculty Self-Evaluation Report

MANAGEMENT AND LEADERSHIP SKILLS

January 2023 – CURRENT, Albanian National Institute of Physics, Tirana, Albania
Management Board Member

January 2017 – September 2019, International Balkan University, Skopje, North Macedonia

Acting Dean of Faculty of Engineering

September 2015 - January 2017, International Balkan University, Skopje, North Macedonia
Rector's Advisor for Research and Projects

September 2012 – September 2013, International Balkan University, Faculty of Engineering, Skopje, North Macedonia

Head of Department of Information Technology

September 2009-2019, International Balkan University, Skopje, North Macedonia
Member of the University Senate

September 2009 - CURRENT, International Balkan University, Faculty of Engineering, Skopje, North Macedonia
Member of the Faculty Academic Teaching Council

September 2009 – CURRENT, International Balkan University, Skopje, North Macedonia

Supervisor of Undergraduate (around 50 students), Master (around 10 students), and PhD Students (3 students)

2018-CURRENT, International Balkan University, Skopje, North Macedonia

Project Management Skills (National and International) – Participant in two Erasmus+ Projects

OTHER SKILLS

- Chemical- and Bio-Physics
- Molecular Dynamics & Monte Carlo Simulations
- Computational Materials Science

- Computational/Theoretical Biophysics
- Principles of Thermodynamics
- Thermodynamics of Biological Phenomena
- Statistical Physics
- Protein Dynamics
- Classical and Quantum Mechanics
- Principal Component Analysis
- Applied Statistics & Probability
- Liquid Crystal Physics
- Ionic Liquids Physics
- Free Energy & Solvation Energy Calculations
- Cluster Analysis
- Mutual information and Transfer Entropy
- Symbolic Analysis
- Machine Learning Approaches
- Machine Learning in Physics
- Artificial Intelligence in Teaching
- Classroom Strategies in Teaching
- Entropy calculation
- Phase Transitions
- Chirality
- Molecular Modelling
- Optimization Methods
- Random Sampling & Processes
- Biologically Inspired Optimization Methods
- MATLAB Simulation & Modelling
- Fluid Mechanics
- Academic Writing
- Differential Equations
- Numerical Integration
- Data Processing and Computer Science
- Computer Simulation of (Macro)Molecular Systems
- Calculation of Molecular Surfaces
- Swarm Particle Optimizations
- Analysis Tools for Molecular Dynamics and Monte Carlo Simulations
- Database & Web-based Services
- Development of Enhancement Conformation Sampling Techniques
- Replica Exchange Technique

CREATIVE WORKS

1998 – CURRENT
Software Design | Database design and Web-services | Lecture Notes for Students

Software:

1. Interactive Molecular Dynamics Simulations of Biological Molecules (In Python & FORTRAN 90.) - Molecular Mechanics and Quantum Mechanics Simulations
2. BSANN (in Python & FORTRAN 90). A python library for performing Bootstrapping Swarm Artificial Neural Network optimization (fitting and dimensionality reduction using encode-decode algorithm.)
3. SIFM (in FORTRAN 90), Symbolic Information Flow Measurement, a Software for Measurement of Information Flow Using Symbolic Analysis.
4. MMGBSA (in FORTRAN 90), a software for calculation of the solvation free energy of (bio) molecular systems (including polar and nonpolar terms).
5. BIOMCSIM (in C), A Monte Carlo software for computer simulation of biomolecular systems

(Published in Computer Physics Communication journal).

6. SQPO (in C++), A Swarm Quantum Optimization general-purpose code.
7. MDGOSim (in FORTRAN, C++), Swarm Particle Replica Exchange Molecular dynamics simulations of proteins using coarse- grained methods.
8. MDAnalTools (Matlab, FORTRAN, Python), A collection of programs and scripts for modelling and statistical analysing of molecular dynamics simulations.

Databases:

1. (2022-updated) A database for Helical Twisting Power of Chiral Molecular Dopants serving as an input for machine learning approaches.
2. (2020-updated) A database for macromolecular properties serving as an input for machine learning approaches.
3. (2020 - updated) Innovating pedagogies at tertiary level: a hypertext of good practices, ELSE Erasmus + Project.

Lecture Notes:

1. (2023) Lecture Materials (for Instructors and Students) in Artificial Intelligence in Finance, For the Transversal Skills in Applied Artificial Intelligence (TSAAI) - Curriculum Development, European Project (Erasmus+ ES01-KA220-HED-000030125).
2. (2020) Lecture Notes in Information Theory, International Balkan University, Skopje, R. of North Macedonia.
3. (2020) Lecture Notes in Physics I, International Balkan University, Skopje, R. of North Macedonia.
4. (2020) Lecture Notes in Discrete Mathematics, International Balkan University, Skopje, R. of North Macedonia.
5. (2016) Algorithms, International Balkan University, Skopje, R. of North Macedonia.
6. (2016) Lecture Notes In Physics II (Optics), International Balkan University, Skopje, R. of North Macedonia.
7. (2016) Lecture Notes in Electromagnetic Theory. International Balkan University, Skopje, R. of North Macedonia.
8. (2014) Probability and Statistics. Essentials about Probability and Statistics, International Balkan University. Skopje, R. of Macedonia.
9. (2014) Thermodynamics & Statistical Physics, State University of Tetovo, Tetovo, R. of Macedonia.
10. (2012) Fundamentals of Medical Physics, State University of Tetovo, Tetovo, R. of Macedonia.
11. (2010) Introduction to Programming. An undergraduate engineering student textbook, International Balkan University, Skopje, R. of Macedonia.

DRIVING LICENCE

Driving License: D (According to Arizona and Minnesota, USA, Class), Valid: 10/2008 – 07/09/2012

ADDITIONAL INFORMATION

PUBLICATIONS

Books

Discrete Mathematics: A Textbook for Students – 2023

Lambert Academic Publishing, ISBN 978-620-6-79009-9,
https://www.morebooks.shop/shop-ui/shop/book-launch-offer/d797c14e9ffa05d161c782b9e687118a6184c6e5

Computer Simulations in Molecular Biology – 2023

Springer Nature, Scientific Computational Series, ISSN 1434-8322 (Paperback), ISSN 2198-2589 (electronic),

Introduction to Algorithms: Learning Algorithms by Examples – 2023

Relativistic Theory of Mechanics and Electromagnetism – 2023

Electromagnetism: With Solved Problems – 2022

Classical Mechanics – 2021

Molecular Dynamics Simulations in Statistical Physics: Theory and Applications – 2020

Peer-reviewed Articles

2019-Present

1. Hiqmet Kamberaj, Viewpoint: The Physics in the New Era of Computing. European Scientific Journal, 19(15), 1-15, 2023.

2. Rabie A. Ramadan, Ahmed Y. Khedr, Kusum Yadav, Eissa Jaber Alreshidi, Md Haidar Sharif, Ahmad Taher Azar & Hiqmet Kamberaj, Convolution neural network based automatic localization of landmarks on lateral x-ray images. Multimed Tools Appl, 81, 37403-37415 2022.

3. H. Kamberaj, Random Walks in a Free Energy Landscape Combining Augmented Molecular Dynamics Simulations with a Dynamic Graph Neural Network Model, Journal of Molecular Graphics and Modelling, 114, 108199, 2022.

4. Ramadan, Rabie A. and Sharif, Md. Haidar and Alreshidi, Eissa Jaber and Sharif, Md. Haris Uddin and Ince, Ibrahim Furkan and Kamberaj, Hiqmet and Khedr, Ahmed Y., Energy Coherent Fog Networks using Multi-Sink Wireless Sensor Networks, IEEE Access, 9, 167715-167735, 2021.

5. D. Rahmani and H. Kamberaj, The Capsule – An Artificial Intelligence Powered Chatbot in Human Resources Management Systems, IBU International Journal of Technical and Natural Sciences, 2, 53-69, 2021.

6. M. Gurboga, G. Kugu, H. Kamberaj and O. Mutlu, Identification of Benzamide Inhibitors for Histone Deacetylase 1 from Babesia and Theileria Species by High-Throughput Virtual Screening and Molecular Dynamics Simulations, Parasitology Research, 120, 2175, 2021.

7. M. Hoxha and H. Kamberaj, Automation of Some Macromolecular Properties Using a Machine Learning Approach, Machine Learning: Science and Technology, 2, 035016, 2021.

8. H. Kamberaj, Heat Flow Random Walks in Biomolecular Systems Using Symbolic Transfer Entropy and Graph Theory, Journal of Molecular Graphics and Modelling, 104, 107838, 2021.

9. Dh. Nebiu and H. Kamberaj, Symbolic Information Flow Measurement (SIFM): A Software for Measurement of Information Flow Using Symbolic Analysis, SoftwareX, 11, 100470, 2020.

10. M. Hoxha, B. Rahmani, H. Kamberaj, A database used for automation of molecular properties using machine deep-learning approach, Bulletin of Natural Sciences, 28, 62-80, 2019.

11. H. Kamberaj, Advanced Methods Used in Molecular Dynamics Simulation of Macromolecules, in Mechanical Design, Materials and Manufacturing, Nova Science Publishers, Inc., pages 57-133, 2019 (ISBN: 978-1-53614-791-9)

2014-2018

1. H. Kamberaj, Faster Protein Folding Using Enhanced Conformational Sampling of Molecular Dynamics Simulation, Journal of Molecular Graphics and Modelling, 81, 32-49, 2018.

2. R. Izairi and H. Kamberaj, Comparison Study of Polar and Nonpolar Contributions to Solvation Free Energy, Journal of Chemical Information and Modeling, 57 (10), 2539-2553, 2017.

3. H. Kamberaj, Sampling Convergence of Collective Motions in Proteins, Journal of Applied Physical Science International, 8(3), 101-112, 2017.

4. H. Kamberaj, Replica Exchange Using q-Gaussian Swarm Quantum Particle Intelligence Method, Engineering and Applied Sciences, 1(2), 20-25, 2016.

5. H. Kamberaj, Conformational Sampling Enhancement of Replica Exchange Molecular Dynamics Simulations Using Swarm Particle Intelligence, The Journal of Chemical Physics, 143, 124105, 2015.

6. H. Kamberaj, Q-Gaussian Swarm Quantum Particle Intelligence on Predicting Global Minimum of Potential Energy Function, Applied Mathematics and Computation, 229, 94-106, 2014.

2009-2013

1. J. Spiriti, H. Kamberaj, A. de Graff, M. F. Thorpe and A. van der Vaart, DNA bending through large angles is aided by ionic screening, Journal of Chemical Theory and Computation, 8 (6), 2145–2156, 2012.

2. J. Spiriti, H. Kamberaj, and A. van der Vaart, Development and application of enhanced sampling techniques to simulate the long-time scale dynamics of biomolecular systems, International Journal of Quantum Chemistry, 112, 33-43, 2012.

3. H. Kamberaj, A Theoretical Model for the Collective Motion of Proteins by Means of Principal Component Analysis, Open Physics (former Central European Journal of Physics), 9(1), 96-109, 2011.

4. H. Kamberaj and A. van der Vaart, Extracting the causality of correlated motions from molecular dynamics simulations, Biophysical Journal, 97(6), 1747-1755, 2009.

5. H. Kamberaj and A. van der Vaart, An optimized replica exchange method for molecular dynamics simulations, The Journal of Chemical Physics, 130, 074904 2009.

6. H. Kamberaj and A. van der Vaart, Correlated Motions and Interactions at the Onset of the DNA-Induced Partial Unfolding of Ets-1, Biophysical Journal, 96, 1307-1317, 2009.

2004-2008

1. H. Kamberaj and A. van der Vaart, Multiple scaling replica exchange method for the efficient sampling of biomolecular systems, The Journal of Chemical Physics, 127, 234102-7, 2007.

2. H. Kamberaj, R.J. Low and M.P. Neal, Correlation between molecular chirality and helical twisting power. A computer simulation study, Molecular Physics, 104(3), 335-357, 2006.

3. M.P. Neal, H. Kamberaj and R.J. Low, Some calculations of molecular chirality, Mol. Cryst. Liq. Cryst., 439, 1937-1943, 2005.

4. H. Kamberaj, R.J. Low and M.P. Neal, Molecular structure and helical twisting power, Ferroelectrics, 315, 183-196, 2005.

5. H. Kamberaj, R.J. Low and M.P. Neal, Symplectic and time-reversible integrators for molecular dynamics simulations of rigid molecules, The Journal of Chemical Physics, 122(22), 224114, 2005.

6. H. Kamberaj, M. A. Osipov, R.J. Low and M.P. Neal, Helical twisting power and chirality indices, Molecular Physics, 102(5), 431-446, 2004.

2001-2003

1. H. Kamberaj, R.J. Low and M.P. Neal, Symplectic and time-reversible integrators for rigid bodies, System Science, 29(2), 31-45, 2003.

2. H. Kamberaj and V. Helms, Monte Carlo simulation of biomolecular systems with BIOMCSIM, Computer Physics Communications, Vol. 141 (3), 375-402, 2001.

CONFERENCES AND SEMINARS

Conference Full-Papers

June 07-10, 2023, Trieste, Italy

Aleksandra P. Kujundziski, Ervin Domazet, Hiqmet Kamberaj, Damir Rahmani, Amra Feta, Francisco Lopez Valverde, Sergio Gàlvaz Rojas, Eduard Petlenkov, Kristina Vassiljeva, Ivan Štajduhar, Tobias Hagen, Anton Gradisek, and Aleksander Zidanšek, Transversal Skills in Applied Artificial Intelligence – The Case of Financial Sector, MIC2023, Trieste, Italy

October 20-23, 2022, Tekirdağ, Turkey

Amra Feta, Aleksandra P. Kujundziski, Hiqmet Kamberaj, Ervin Domazet, Damir Rahmani, Neslihan Ademi, Francisco Lopez Valverde, Sergio Gàlvaz Rojas, Eduard Petlenkov, Ivan Štajduhar, Tobias Hagen, Anton Gradisek, and Aleksander Zidanšek, Transversal Skills in Applied Artificial Intelligence - Curriculum Development, Fourth International Congress on Applied Sciences, Engineering and Mathematics

May 20-21, 2021 – Tirana, Albania

Damir Rahmani and Hiqmet Kamberaj, Implementation and Usage of Artificial Intelligence Powered Chatbots in Human Resources Management Systems, 2nd International Conference on *Social and Applied Sciences*

September 9-11, 2003 – Coventry, United Kingdom

Hiqmet Kamberaj, Low, R.J., and Neal, M.P. (2003) Symplectic and time-reversible integrators for rigid bodies, 16th Conference on Systems Engineering, ICSE 2003, editors: K.J. Burnham and O.C.L. Haas, Coventry University, Coventry, UK, Vol. 1, 320-325

2001 – Germany

T. Conka-Nurdan, K. Nurdan, F. Constantinescu, B. Freisleben, Hiqmet Kamberaj, N. A. Pavel, I. Rauhut, K. Reichmann, A.H. Walenta (2001) Influence of the Detector Parameters on a Compton Camera, IEEE, 22-26.

Conference Abstracts
2019-Present

28/04/2023 – 29/04/2023 – Tirana, Albania
Computer Simulations of (Macro) Molecular Systems, Second Conference of National Institute of Physics, Academy of Sciences of Albania

October 20-23, 2022, Tekirdağ, Turkey
From Galilean to Lorentz Transformations: A Pedagogical Viewpoint, Fourth International Congress on Applied Sciences, Engineering and Mathematics

February 10-11, 2022, Tirana, Albania
Interactive molecular dynamics simulations of biological molecules, First conference of National Institute of Physics, Academy of Sciences of Albania

May 20-21, 2021, Tirana, Albania
Implementation and Usage of Artificial Intelligence Powered Chatbots in Human Resources Management Systems, 2nd International Conference on *Social and Applied Sciences*, University of New York Tirana

June 3-4, 2021, Skopje, North Macedonia
Electrostatic Properties of Solutions, International Conference on Applied Sciences, Engineering and Mathematics (ICASEM 2021)

June 4-6, 2020, Skopje, North Macedonia
Cavity Quantum Electrodynamics Model to Study Quantum Fluctuations in Vacuum: Application to Quantum Information Processing, International Conference on Applied Sciences, Engineering and Mathematics (ICASEM 2020)

June 4-6, 2020, Skopje, North Macedonia
Design of a Virtual Classroom for Engineering Students: Application of a Web-based Service and Machine Learning, International Conference on Applied Sciences, Engineering and Mathematics (ICASEM 2020)

June 4-6, 2020, Skopje, North Macedonia
Dynamics and their Time Scales in Complex Macromolecular Systems, International Conference on Applied Sciences, Engineering and Mathematics (ICASEM 2020)

June 18-20, 2019, Tirana, Albania
Automation of Molecular Properties Using Machine Learning Approaches, Sixth International Congress on Fundamental and Applied Sciences

2014-2018

July 2-3, 2018, Vienna, Austria
Analysing Causality of Molecular Interactions: A Case Study of Molecular Dynamics Simulation of Protein-RNA System, Applied Physics 2018

June 16-17, 2017, Tetovo, North Macedonia
On the calculation protein-protein binding free energy using molecular dynamics simulations, 1st International Conference of Natural Sciences and Mathematics

May 5-7, 2017, Ohrid, North Macedonia
Perspectives on Molecular Dynamics Simulations & Free Energy Calculations for Biomolecular Systems, International Conference on Applied Sciences, Engineering and Mathematics

May 29-31, 2016, Tirana, Albania
Molecular Dynamics Simulation Study of Protein -Protein Interactions, ALBNANO2016 NANOTECHNOLOGY AND BIOSENSORS

June 1-5, 2016, Istanbul, Turkey
Enhanced Transition Path Sampling Using Swarm Particle Intelligence in Replica Exchange Molecular Dynamics, Second International Conference on Pure & Applied Sciences

September 25-28, 2014, Skopje, North Macedonia
The Tenth Conference of the Society of Physicists of Macedonia, Calculations of the Electronic Properties of Molecules using Computational Quantum Mechanics Models.

April 17-19, 2014, Istanbul, Turkey
Second International Bau-Drug Design Symposium, Novel methods and emerging targets in drug discovery & patented drug development, Bahcesehir University, Structural Modelling, Molecular Docking and Molecular Dynamics Simulation of Trypanothione Synthase.

2009-2013

June 2-5, 2013, Istanbul, Turkey
Symbolic Mutual Information for Estimation of Nonlinear Higher Order Correlated Fluctuations, International Conference on Applied Analysis and Mathematical Modelling

September 12-14, 2012, Pisa, Italia
Dynamics and static dielectric response of water in anionic hydration shells using ab initio molecular dynamics simulation, International Meeting on Atomic and Molecular Physics and Chemistry, Scuola Normale Superiore Pisa

September 1-4, 2011, Prishtina, Kosova
Modelling of protein-protein interactions: Calculation of the binding free energy and computational alanine scanning, Sixth International Annual Meeting of Alb-Science Institute

August 23-27, 2011, Budapest, Hungary
Elucidating the modular structure of the protein G C2 fragment and human IgG Fc domain binding site using the computer simulations, Eighth European Biophysics Congress

April 17-17, 2009, Minneapolis, USA
Computational Alanine Scanning of ß -lactamase Inhibitor Protein and TEM-1 ß-lactamase Complex, Bioinformatics: Building Bridges Symposium, Minneapolis, MN, USA

April 3-5, 2009, Minneapolis, USA
Computational Alanine Scanning of ß-lactamase Inhibitor Protein and TEM-1 ß-lactamase Complex, MIKI Meeting, Minneapolis, MN, USA

2004-2008

February 2-6, 2008, Long Beach, California, USA
Biophysics Society 52nd Annual Meeting & 16th IUPAB International Biophysics Congress, Long Beach, CA, USA, Unfolding upon binding: Elucidation of the complex binding dynamics of the Ets-1 transcription factor by computer simulation

October 6, 2007, Tempe, Arizona, USA
Postdoctoral Research Day symposium at Biodesign Centre, Tempe, Arizona, USA, Unfolding upon binding: Elucidation of the complex binding dynamics of the Ets-1 transcription factor by computer simulation

April 21, 2007, Tempe, Arizona, USA
Annual meeting BioPhest 2007 at Arizona State University, Tempe, Arizona, USA, Multiple scaling replica exchange method for the efficient sampling of biomolecular systems

April 7, 2006, Edmonton, Alberta, Canada
Postdoctoral Research Day Symposium at University of Alberta, Edmonton, Alberta, Canada, Multiple time scale molecular dynamics simulations of biomolecular systems

July 1-6, 2005, Utrecht, The Netherlands
Sixth International Conference on Liquid Matter at Utrecht University, Utrecht, The Netherlands, Calculation of molecular chirality and helical twisting power

March 22-26, 2005, Exeter, United Kingdom
British Liquid Crystal Society Annual Meeting at Exeter University, Exeter, UK, Calculations of the Molecular Chirality

April 5-7, 2004, Manchester, United Kingdom
British Liquid Crystal Society Annual Meeting at Manchester Metropolitan University, Manchester, UK, Applications of Calculations of the Molecular Chirality and Helical Twisting Power

2001-2003

August 24-29, 2003, Dublin, Ireland
Ninth International Conference on Ferroelectric Liquid Crystals at Trinity College, Dublin, Ireland, Molecular structure and helical twisting power

April 7-9, 2003, Cambridge, United Kingdom
British Liquid Crystal Society Annual Meeting at Cambridge University, Cambridge, UK

June 30 – July 5, 2002, Edinburgh, United Kingdom
Ninetieth International Liquid Crystal Conference 2002, Edinburgh, UK

Keynote/Invited Speaker

September 19 – 22, 2022, Istanbul, Turkey
Computer Simulation and Modelling of Biological Molecular Systems, Advances in Molecular Biology Congress

December 30, 2021, Online
Advances in Computer Simulations of Macromolecular Systems, 2nd International Conference on New Computer Science and Engineering Trends

June 10-12, 2021, Gaziantep, Turkey
Molecular Dynamics Simulations of DNA- and RNA-Protein Systems, Fourth International Conference on Medical Devices (ICMD'2021)

November 12-14, 2020, Izmir, Turkey
Replica Exchange using an Augmented Molecular Dynamics Method, Third International Conference on Artificial Intelligence towards Industry 4.0 (ICAII4'2020)

July 1-2, 2020, Istanbul, Turkey
Advances in Computer Simulations of Macromolecular Systems, International Conference on New Computer Science and Engineering Trends

September 23-25, 2010, Skopje, North Macedonia
Eighth Conference of the Society of Physicists of the Republic of Macedonia, Skopje, R. of Macedonia. The role of correlated motions in biomolecular systems

November 16, 2010, New York, NY, USA
Causality of Correlated Motions in Biomolecular Systems & Novel Algorithm for Global Optimization Problems in Ligand and/or peptide-protein binding, Schrödinger Company

July 19-24, 2009, Tilton, NH, USA
Gordon Conference on Computer-aided Drug Design, Computational Alanine Scanning of ß- lactamase Inhibitor Protein and TEM-1 ß-lactamase Complex

November 29-December 2, 2004, United Kingdom
Mini-Symposium on the Chirality and Nonlinearity in Liquid Crystals, The Rank Prize, Calculations of Molecular Chirality

May 27, 2004, United Kingdom
Young Materials Modellers Forum at Daresbury Laboratory, Symplectic and Time Reversible Integrators for Molecular Dynamics Simulations of Rigid Molecules

Panels, Seminars, Workshops, and Forums

Hiqmet Kamberaj, Participant (Virtual) at Meeting ``Transversal Skills in Applied Artificial Intelligence - Curriculum Development", January 17, 2023.

Hiqmet Kamberaj, Participant (Virtual) at Scientific Forum on ``Physics at Pre-University System in Albania", January 14, 2023.

Hiqmet Kamberaj, Participant at Meeting ``Transversal Skills in Applied Artificial Intelligence - Curriculum Development", September 29-30, 2022, Skopje, North Macedonia.

Hiqmet Kamberaj, Panellist at Advances in Molecular Biology Congress, 19-22 September 2022, Istanbul, Turkey.

Hiqmet Kamberaj, Chair of the Panel ``Computer and Communication Engineering I", International Conference on Applied Sciences, Engineering and Mathematics, June 3-4, 2021, Skopje, R. of North Macedonia.

Hiqmet Kamberaj, Inauguration Speech (4 minutes) and Associate Organiser, International Conference on Advances in Material Science 2020, October 3, 2020, India.

Hiqmet Kamberaj, Chair of the Panel ``Computer and Communication Engineering II", International

Conference on Applied Sciences, Engineering and Mathematics, June 4-6, 2020, Skopje, R. of North Macedonia.

Hiqmet Kamberaj, Chair of the Panel ``Chemistry, Chemical and Environmental Engineering and Protein Engineering", International Conference on Applied Sciences, Engineering and Mathematics, June 4-6, 2020, Skopje, R. of North Macedonia.

Hiqmet Kamberaj, Third Meeting of "Eco/Logical Learning and Simulation Environments in Higher Education", June 11-13, 2019, Nicosia, Cyprus.

Hiqmet Kamberaj, Second Meeting of "Eco/Logical Learning and Simulation Environments in Higher Education", February 2019, Skopje, R. of North Macedonia.

Hiqmet Kamberaj, Kick-off Meeting of "Eco/Logical Learning and Simulation Environments in Higher Education", November 7-10, 2018, Viterbo, Italy.

Hiqmet Kamberaj, Moderator of the Panel "Engineering Information Technology", fifth IBU International Student Congress 2018, "Investing in Youth for a Sustainable Future", 04-06 October 2018, Skopje, R. of Macedonia.

Hiqmet Kamberaj, Moderator of the Panel "Engineering Information Technology", fourth IBU International Student Congress 2017, "The Creation of the New World in a Globalized Era", 05-06 October 2017, Skopje, R. of Macedonia.

Hiqmet Kamberaj, Moderator of the Panel "Industrial Engineering", International Conference of Applied Sciences, Engineering and Mathematics (ICASEM 2017), 5-7 May 2017, Ohrid, R. of Macedonia.

Hiqmet Kamberaj, Kick-off meeting and strategy workshop within the project "Needs Assessment, Strategy and Policy Development for National Technology Transfer Office", 3rd February 2015, Skopje, R. of Macedonia.

HOBBIES AND INTERESTS

Football (High-School and University Team Player (Faculty of Engineering Team at University of Coventry, United Kingdom – Indoors) | Reading | Politics/Debates/Polemics (passive)

RESEARCH INTERESTS

Theoretical and Computational Physics/Chemistry | Soft matter, Biophysics and Nanophysics | Protein and DNA dynamics | Bio-inspired optimization | Artificial Intelligence, Machine Learning & Deep Learning approaches | Quantum Machine Learning Algorithms | Bioinformatics | Numerical integrators for molecular dynamics | Monte Carlo and molecular dynamics techniques | Free energy calculations | Information flow in biomolecular systems | Coarse-grained models of proteins, lipids, and DNA | Swarm particle intelligence optimization | GPU-accelerated computing | Quantum simulations of molecular systems

HONOURS AND AWARDS

09/2016
Certificate of Excellence – International Balkan University - For his outstanding performance in academic research during the academic year 2015/2016

04/2009
First Prize in Bioinformatics - Building Bridges Symposium, University of Minnesota – Computational Alanine scanning of ß-lactamase Inhibitor Protein and TEM-1 ß-lactamase Complex

01/2006 – 06/2006
Post-doctoral Fellowship - University of Alberta, Edmonton, Canada

09/2001 – 09/2003
MPHIL Scholarship - University of Coventry, Coventry, United Kingdom

09/2003 – 12/2004
PhD Scholarship – Manchester Metropolitan University, Manchester, United Kingdom

10/1997 – 02/2000
MSC Scholarship – University of Siegen, Siegen, Germany

02/2000 – 08/2001
Post-graduate Studentship – Deutsche Forschungsgemeinschaft, Max-Planck Institute of Biophysics, Frankfurt am Main, Germany

04/1986
Second Prize of the Mathematical Olympiad - Region Mathematical Olympiad Committee, Vlora, Albania

NETWORKS AND MEMBERSHIPS

01/01/2023 – CURRENT Tirana
Albanian National Institute of Physics Management Board Member

2010 – CURRENT, Brussels
COST Association Member

2018 - CURRENT, North Macedonia
Materials Research Society of Macedonia, Member

2011-2016, USA
American Chemical Society, Member

2006-2009, USA
American Biophysics Society, Member

2001-2005, United Kingdom
British Liquid Crystal Society, Member

MENTORSHIPS

23/09/2009 – CURRENT, International Balkan University (Skopje) / State University of Tetovo (Tetovo), North Macedonia

Undergraduate Students: More than 50

Master Students: About 14

PhD Students: 3

Website: http://hkamberajibu.wikidot.com/people

PROJECTS

01/09/2018 – 30/06/2021
Eco/Logical Learning and Simulation Environments in Higher Education (ELSE) European Project of Erasmus + KA203

01/09/2022 – CURRENT
Transversal Skills in Applied Artificial Intelligence – Curriculum Development (TSAAI) European Project of Erasmus + TSAAI-KA220-HED

VOLUNTEERING

Editorial Board Member:

2003-Present: European Scientific Journal
2023-Present: Frontiers in Molecular Biodesign
2014-2017: International Journal of Dataset Papers in Physics
2014-Present: Turkish Academic Journal of Intelligent Systems
2017-2020: European Journal of Biophysics
2018-Present: SCIREA Journal of Physics

Ad-hoc Reviewer:
International Journal of Computational and Theoretical Chemistry
International Journal of Electrical Power & Energy Systems
Science Journal of Applied Mathematics and Statistics
Journal of Chemical Information and Modelling
Journal of Molecular Graphics and Modelling
BMC Bioinformatics
Entropy
BBA: Proteins and Proteomics
Journal of Biomolecular Structure & Dynamics
Polymers

Reviewer:
2023 – Present: Frontiers in Biomolecular Simulations