

Curriculum Vitae

Stefan Kolev Kolev

Birth date: 28th December 1983

Nationality: Bulgarian

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Address: Bulgaria, Varna 9009,

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Education and Qualifications

2010-2014

St. Clement of Ohrid University of Sofia

Faculty of Chemistry

PhD

Defended PhD thesis: „Quantum-chemical investigation the influence of hydrogen bonds and metal ions on RNA”

Massively parallel computational approaches are used to study the properties of biomolecules. Quantum chemical software includes Gaussian and CP2K. All computations are performed on Blue Gene P supercomputer and local Linux cluster. Extensive data analysis is done with Origin, Excel and C# programs.

Publications:

1. Stefan K. Kolev, Petko St. Petkov, Miroslav A. Rangelov, Georgi N. Vayssilov „Density Functional Study of Hydrogen Bond Formation Between Methanol and Organic Molecules Containing Cl, F, NH₂, OH, and COOH Functional Groups” The Journal of Physical Chemistry A, 115, 14054–14068 (2011).
2. Stefan K. Kolev, Petko St. Petkov, Miroslav A. Rangelov, Georgi N. Vayssilov „Ab Initio Molecular Dynamics of Na⁺ and Mg²⁺ Counter Cations at the Backbone of RNA in Water Solution” ACS Chemical Biology, 8 (7), 1576–1589 (2013).
3. Hristo Iglev , Stefan K. Kolev, Hubert Rossmadl, Petko St. Petkov, Georgi N. Vayssilov “Hydrogen Atom Transfer from Water or Alcohols Activated by Presolvated Electrons” The Journal of Physical Chemistry Letters, 6 (6), 986–992 (2015)

Participation in scientific projects (in Bulgaria)

2008-2014

Centre of excellence „Supercomputer Applications”.

2008-2013

Project „Clarification the mechanism of peptide biosynthesis in the ribosome – model theoretical and experimental studies”

2006 - 2007

St. Clement of Ohrid University of Sofia

Faculty of Chemistry

Master's degree "Organic Materials in the High Technology"

Final thesis: "UV-Vis absorption and fluorescent characteristics of differently substituted chalcones". Quantum computational and UV-Vis experimental methods are used to investigate absorption and fluorescent properties of dye molecules.

2002 - 2006

St. Clement of Ohrid University of Sofia

Faculty of Chemistry

Bachelor's degree in organic chemistry

Specialization in synthesis and analysis of organic products

1997 - 2002

High School

3 PMG College – Varna

Extensive study of chemistry and English

1999 Varna

Electronics course

Use of analogue electronics in signal processing and radio communications

Experience

01.09.2014 – Present

Bioinnovative LTD Bulgaria, Varna – Chemical technologist

01.01.2013 – Present

SURT Technologies LTD Bulgaria, Sofia – Researcher

01.04.2009 – 01.01.2010

St. Clement of Ohrid University of Sofia, Researcher on private contracts

27.10.2008 – 01.04.2009

Polimeri chemical plant Bulgaria, Devnia – Operator control room in sodium hydroxide producing factory.

02.01.2008 – 25.10.2008

Science Assistant

Military Medical Academy - Bulgaria Sofia; Naval Hospital - Varna; "Laboratory for Toxicological Analysis". Experience with chromatography and analysis of toxicological information.

2007

Research practice

Synthesis and UV-Vis spectral analysis of CdS and CdSe nano particles.

2006

Industrial practice in Aroma AD – Bulgaria, Sofia
Participation in cosmetics production

Languages

Bulgarian

English

Computer Skills

Linux, Microsoft Windows, Microsoft Office, Adobe Illustrator, Photoshop,
CorelDraw

Chemical and Quantum Applications

Gaussian, CP2K, DS ViewerPro, ChemOffice, VMD, Protein Data Bank,
Hyperchem

Mathematical Applications

Origin, Excel

Programming

C#

CAD Systems

AutoCAD

Driving Licence

Category B

Participation in Scientific Conferences

1. IX National Bulgarian chemistry conference for PhD students, Sofia, Bulgaria 2010, “Formation of hydrogen bonds between methanol and Cl, F, NH₂, OH substituted organic molecules, a DFT study.” S. K. Kolev, P. St. Petkov, G. N. Vayssilov; (speaker)
2. Fourth Humboldt conference on computational chemistry, Varna, Bulgaria 2010, “Density functional study of hydrogen bond formation between methanol and organic molecules containing Cl, F, NH₂, OH and COOH functional groups.” S. K. Kolev, P. St. Petkov, G. N. Vayssilov; (poster)
3. Project "MADARA" conference, Sofia, Bulgaria 2011, “Formation of hydrogen bonds between methanol and Cl, F, NH₂, OH and COOH substituted organic molecules. A DFT study.” S. K. Kolev, P. St. Petkov, M. A. Rangelov, G. N. Vayssilov; (speaker)
4. X National Bulgarian chemistry conference for PhD students, Sofia, Bulgaria 2011, “Interaction between Na⁺ and Mg²⁺ ions and phosphate groups from single stranded RNA in water solution. A Born-Oppenheimer molecular dynamics study.” S. K. Kolev, P. St. Petkov, G. N. Vayssilov; (speaker)

5. Working seminar "Supercomputer applications", Bansko, Bulgaria 2012, "Interaction between Na^+ and Mg^{2+} ions and phosphate groups from nucleic acids in water solution. A Born-Oppenheimer molecular dynamics study." S. K. Kolev, P. St. Petkov, G. N. Vayssilov; (speaker)
6. XI National Bulgarian chemistry conference for PhD students, Sofia, Bulgaria 2012, "Simulation of OH ion and radical in water solution, an ab initio molecular dynamics study." S. K. Kolev, P. St. Petkov, G. N. Vayssilov; (speaker)
7. International conference: Advanced functional materials, Varna 2012, "Ab initio molecular dynamic simulation of the behavior of solvated electron, hydroxide ion and radical in water." S. K. Kolev, P. St. Petkov, G. N. Vayssilov; (poster)
8. XII National Bulgarian chemistry conference for PhD students, Sofia, Bulgaria 2013, "Ab initio molecular dynamics study of the interaction between Na^+ and Mg^{2+} ions and the phosphate groups of RNA, taking into account the nitrogen containing bases." S. K. Kolev, P. St. Petkov, G. N. Vayssilov; (speaker)
9. Seventh Framework science conference, Pravets 2013, "Ab initio simulations of single electron in water and methanol: generation of reactive hydrogen atoms by pre-solvated electrons." S. K. Kolev, P. St. Petkov, G. N. Vayssilov, H. Iglev, H. Rossmadl; (speaker)
10. Supercomputing applications SuperCA++, Kystendil 2013, "Interaction between Na^+ and Mg^{2+} ions and phosphate groups from single stranded RNA in water solution. A Born-Oppenheimer molecular dynamics study." S. K. Kolev, P. St. Petkov, G. N. Vayssilov; (speaker)

Varna, 09 December 2015