Dr / M. M. Aish

CURRICULUM VITAE (*C.V.*)

Menoufia University, Egypt

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PERSONAL

Born; 10 / 07 /1982. Menoufia , Egypt.

ADDRESS

Physics Department, Faculty of Science, Menoufia University, Egypt.
P.O. Box* 32511 Shebin Elkom, Menofia, Egypt.

MAIN RESEARCH TOPICS

Materials science, Condensed Matter Physics, Theoretical Physics, Nano-Science

EDUCATION

2014. Ph. D., General Physics, Faculty of natural Science Altai state technical University. Title: " Investigation of deformation and fracture characteristics of metallic nanowires and alloys depending on it's shape and size"

2009. M. Sc., Theoretical Physics, Physics Department, Faculty ofScience, Menoufia University. Title:" Heavy ion collision at high energy"

2005. Diploma., Theoretical Nuclear Physics, Physics Department, Faculty of Science, Menoufia University. **2004. B.Sc.,** Physics Department, Faculty of Science, Menoufia University.

POSITION

2016: Assistant professor Dept., faculty of science, Menoufia University, Egypt.
2015: Assistant professor General Physics, Faculty of natural Science Altai state technical University, Russia.
2014: lecturer, Physics Dept., faculty of science, Menoufia University, Egypt.
2009: Lecturer Assistant, Physics department, faculty of science, Menoufia University.
2004: Demonstrator Physics department, faculty of science, Menoufia University.

PARTICIPATION IN PROJECTS:

1- Russian- Ukraine project, RFBR № 14-08-90416-Ukr_a program and the Ministry of Education of the Russian Federation № 166.

2- Russian-Belorussia, RFBR № 15-48-04127 - r_sibir_a program and the Ministry of Education of the Russian Federation № 166.

ACADEMIC EDITORS & REVIEWERS

* International Journal of Theoretical and Applied Physics (IJTAP), (2011), Ascent Publication. * International Journal of Engineering Research and Technology (IJERT).
* Journal of Harmonized Research in Applied Science (member of editorial/Reviewer team).
* International Journal of Modern Studies in Mechanical Engineering (IJMSME).

PROFESSIONAL SOCIETY MEMBERSHIPS

* International Association of Computer Science and Information Technology (IACSIT). *Asia-Pacific Chemical, Biological& Environmental Engineering Society (APCBEES).

Honors

Included in most of the biographical references from the following international centers;

[1] Marquis Who′s Who (USA) - Who′s Who in the world

ATTENDED CONFERENCES AND SCHOOLS

1-Nov,17-22, (2008), SESAME-JSPS School and SESAME 7th Users Meeting, Cairo University Cairo Egypt . 2- 29th May to 4th June (2009), Egyptian School on High Energy Physics Center of Theoretical Physics British University of Egypt (CTP- BUE).

3- 9th,oct to 6th Nov,(2009), International student practice for postgraduate students from Egypt in JINR fields of research, Dubna Russia.

4- Exotic nuclei and nuclear/particle astrophysics. III: From nuclei to stars. Proceedings, 23rd Carpathian Summer School of Physics, CSSP10, Sinaia, Romania, June 20-July 3, 2010.

5. 5th, November to 1st December (2012), one month practice in Bogoliubov Laboratory of Theoretical Physics (BLTP), Dubna, Russia.

6. 9-13 September (2013),INTERNATIONAL CONFERENCE, Hierarchically built systems of organic and inorganic nature, Tomsk Russia.

7. June 30 - July 5, (2014) XLI International Summer School - Conference "Advanced Problems in Mechanics" St. Petersburg, Russia.

8. 2-4 JUNE (2014) 3rd International Workshop on Physics Based Material Models and Experimental Observations, 2-4 JUNE, 2014, Cesme/Izmir – TURKEY.

9. 4-9 sep (2014), XII International conference on "Evolution of the defect structure in condensed matter" (EDS-2014), Barnaul, Russia.

10. 8 - 12 December (2014) XV International Scientific and Technical School and Seminar Ural for metals - Young Scientists "Materials and Metal Physics of light alloys", Yekaterinburg, Russia.

11. 28-31 March 2015, EUROSUNMED INTERNATIONAL SCHOOL on Photovoltaic's, Concentrated Solar Power, Storage, Grid Integration and the Economics of Renewable Energy, Sharm el-Sheikh, Egypt .

12. *2nd Egyptian Educational Institute on Responsible Science,* Ain El Sokhna, Egypt, from July 21-26, 2015.

13. The Second International Conference on New Horizons in Basic and Applied Science (ICNHBAS, www.nhbas.com) 1–6 August 2015, Hurghada, Egypt.

13. 6th International Russian-China Conference "Effect of external influences on the strength and plasticity of metals and alloys" Barnaul- Belokurikha, Russia, September 15-20, 2015.

14. 6–9 October (2015) ADVANCED MATERIALS IN TECHNOLOGY AND CONSTRUCTION (AMTC-2015): Tomsk- Russia.

15. VII International School "Physical material" January 31 - February 5, 2016, Tolyatti, Russia.

16. The XX International Scientific Conference of Young Scientists and Specialists (AYSS-2016) Joint Institute for Nuclear Research Dubna (Russia) 14-18 March 2016.

17. VIII International Conference "Micromechanisms plasticity, fracture and related phenomena "(MPFP-2016) June 27 July 1, Tambov (Russia) – 2016.

18. MATERIALS STRUCTURE & MICROMECHANICS OF FRACTURE, MSMF8, Brno, Czech Republic June 27 - 29, 2016.

RELEVANT PUBLICATIONS:

1. **Mohammed Aish** and Mikhail Starostenkov **"Mechanical properties of metallic nanowires using tight-binding model"** AIP Conf. Proc. 1698, 040006 (2016); http://dx.doi.org/10.1063/1.4937842.

2. **M.M. Aish**, Moneeb T.M. Shatnawi, M.D. Starostenkov **"Characterization of strain-induced**

structural transformations in CdSe nanowires using molecular dynamics simulation", Materials Physics and Mechanics, 2015, vol. 24, no. 4, p. 403-409.

3. A.A.M. Habib, **M. M. Aish**, **Self-absorption coefficients of sulfur emission lines**, *Canadian Journal of Physics94(1) (2016) 122-129,dol: 10.1139/cjp-2015-0372*.
4. **M.M. Aish**, M.D. Starostenkov, **MODELING AND SIMULATION OF Ni NANOFILM USING MORSE PAIR POTENTIAL**, Materials Physics and Mechanics 24 (2015) 139-144.
5. M. D. Starostenkov, **M. M. Aish**, **Molecular dynamic study for ultrathin Nickel nanowires at the same temperature, Materials Physics and Mechanics**, 2014, vol. 21, no. 1, p. 1-7.
6. Starostenkov M.D., **Aish M.M**. **Effect of length and cross-sectional area on Ni3Fe alloy plasticity** //

Advanced Materials Research. 2014. V.1013. P. 242-248.

7. **M.M. Aish**, M.D. Starostenkov, **Effect of volume on the mechanical properties of nickel nanowire**// Materials Physics and Mechanics, vol. 18, no. 1, pp. 53–62, 2013.
8. **M. M. Aesh** , S. M. Maise, H. M. EL Samman, M. T. Hussein, **Thermodynamic treatment in a case of heavy ion collision, International Journal of the Physical Sciences**, 6 (33) (2011) 7420-7427.
9. **M. M. Aish**, M. D. Starostenkov, International Journal of Theoretical and Applied Physics (IJTAP), Vol.4, No. I (June 2014), pp. 79-84.
10. M.D. Starostenkov, **M.M. Aish**, **Feature deformation and breaking of Ni nanowire** // Letters on Materials, V.4 is.2, 2014, P.89-92.
11. M.M. Aish, M.D. Starostenkov, **Molecular Dynamic Simulations of ultrathin Nickel nanowires at various temperatures** // SOP Transactions on Nanotechnology, Volume 1, Number 1, pp.30-36, 2014. DOI: 10.15764/NANO.2014.01004.
12. M.D. Starostenkov, M.M. Aish, A.A. Sitnikov, S. A. Kotrechko, **Deformation of different nickel nanowires at 300 K** // Letters on Materials, V.3 is.3, 2013, P.180-183.
13. M.M. Aish, M. D. Starostenkov, **Molecular Dynamic Simulations of Nickel Nanowires at Various Temperatures**.// International Journal of Scientific and Innovative Mathematical Research (IJSIMR) V 2, Is. 3, 2014,p301-305.

14. Sitnikov A.A, Старостенков М.Д., Айш М.М**,. Деформация различных никелевых нанопроводов при 300 К**, Фундаментальные проблемы современного материаловедения " Fundamental problems of modern materials" 10 No 3 (2013) p 403.

INTERNATIONAL CONFERENCES:

2016conferences'

[1] Starostenkov M. D.**, Aish M. M., Ruder D. D.** "**Feature of Structure Transformation of HCP Metallic Ti Nanowires Using Cleri-Rosato Potential at low Temperature**" XIV International Summer School "Evolution of Defect Structures in Condensed Matter Barnaul- Belokurikha, Russia, September 12-17, 2016.

38. **Starostenkov M. D.** , **Aish M. M.** "**Characterization of Fatigue Crack Response: 3D Molecular Dynamic Simulation**" XIV International Summer School "Evolution of Defect Structures in Condensed Matter Barnaul- Belokurikha, Russia, September 12-17, 2016.

[2] Abourabia A.M., **Aish M. M.**, Popov V.A, Starostenkov M. D. "**On the Patterns of the Aortic reflection nonlinear waves**" XIV International Summer School "Evolution of Defect Structures in Condensed Matter Barnaul- Belokurikha, Russia, September 12-17, 2016.

[3] Mohammed Mahmoud Aish, Mikhail D Starostenkov: **Deformation and Fracture of Metallic Nanowires**,MATERIALS STRUCTURE & MICROMECHANICS OF FRACTURE, MSMF8, Brno, Czech Republic June 27 - 29, 2016.

[4] Aish M.M., Starostenkov M.D**. Structural transformations in Pt nanowires under uniaxial tensile strain in direction <001> at low temperature** VIII International Conference "Micromechanisms plasticity, fracture and related phenomena "(MPFP-2016) June 27 July 1, Tambov (Russia) – 2016.

[5] M. M. Aish "**Characterization of Fatigue crack Response 3D Molecular dynamic simulation**" The XX International Scientific Conference of Young Scientists and Specialists (AYSS-2016) Joint Institute for Nuclear Research Dubna (Russia) 14-18 March 2016.

[6] Aish M.M. **"Deformation and fracture of Gd nanowires"** VII Международная школа Физическое материаловедение» с элементами научной школы для молодежи 31 января - 5 февраля 2016 г. , Тольятти. VII International School "Physical material" January 31 - February 5, 2016, Tolyatti, Russia.

2015conferences'

[1] Mohammed Aish, M. Starostenkov **"Mechanical properties of metallic nanowires using tight-binding model"** ADVANCED MATERIALS IN TECHNOLOGY AND CONSTRUCTION (AMTC-2015): 6–9 October (2015) Tomsk- Russia.

[2] Aish M.M. **"Structural transformations in Pt nanowires under uniaxial tensile strain in direction <001> at low temperature"** Advanced materials with a hierarchical structure for the new technologies and reliable design 21-25 September 2015, Tomsk, Russia

[3] M.M. Aish, M. D. Starostenkov, "**Fracture of metals and alloys: Special Study Crack modes** " The 6th

International Russian-China Conference “Effect of external influences on the strength and plasticity of metals and alloys” September 15-20, 2015, Barnaul- Belokurikha, Russia.

[4] M. M. Aish "Mechanical properties of Ni nanofilm" The Second International Conference on New Horizons in Basic and Applied Science (ICNHBAS, www.nhbas.com) 1–6 August 2015, Hurghada, Egypt.

[5] **M. M. Aish**, **Inhomogeneous deformation in single crystals of nickel with different hierarchies structural elements**, 4th International Conference on Mathematical Modeling in Physical Sciences, June 5-8, 2015, Mykonos, Greece.

[6] **Mohammed Mahmoud Aish**, **Effect of seed crack on plasticity of Ni nanowir** // 2015 TMS Annual Meeting & Exhibition, Fatigue in Materials: Fundamentals, Multiscale Modeling, Life Prediction and Prevention, 15/03/2015 - 19/03/2015 Orlando, FL, USA.

2014conferences’

[1] M. M. Aish, **Atomic transformation in tetragonal CuPt alloy under uniaxial tension at low temperature** // XV МЕЖДУНАРОДНАЯ НАУЧНО-ТЕХНИЧЕСКАЯ УРАЛЬСКАЯ ШКОЛА-СЕМИНАР МЕТАЛЛОВЕДОВ – МОЛОДЫХ УЧЕНЫХ "Материаловедение и металлофизика легких сплавов", Екатеринбург, 8 – 12 декабря 2014"(XV INTERNATIONAL SCIENTIFIC AND

TECHNICAL SCHOOL and SEMINAR URAL for metals - Young Scientists "Materials and Metal Physics of light alloys", Yekaterinburg, 8 - 12 December 2014) Dol: proceeding book Collection of scientific papers of the school pp, 201.

[2] M. D. Starostenkov, **M.M. Aish**, **Molecular Dynamic Simulations of Ultrathin Ni3Fe Alloy at Different Temperatures** // International Conference on Construction Materials and Structures, 24-26 November 2014, Johannesburg South Africa. (Filename: CMATS137.doc or CMATS137.pdf).

[3] M. M. Aish, M. D. Starostenkov, **Modeling deformation and fracture of Ni nanofilms using Cleri-Rosato potential** // XII International conference on "Evolution of the defect structure in condensed matter" (EDS-2014) 4-9 sep, Barnaul, Russia.

[4] Starostenkov M.D., **Aish M.M.**, Effect of vacancy on the mechanical properties of ultrathin nickel nanowires, // INTERNATIONAL CONFERENCE "PHYSICAL MESOMECHANICS multilevel system of 2014. Simulation, and experimentation, APPLICATION ", 3-5 September (2014) Tomsk, Russia.

[5] **Aish M.M.**, Starostenkov M.D., **Effect of temperature on the structural deformation and mechanical strength of nickel nanowires using tight binding potential**, // INTERNATIONAL CONFERENCE "PHYSICAL MESOMECHANICS multilevel system of 2014. Simulation, and experimentation, APPLICATION ", 3-5 September (2014) Tomsk, Russia.

[6] **M. M. Aish**, **Modeling deformation and fracture of Ni nanofilm** // International Conference on Mathematical Modeling in Physical Sciences, August 28-31 (2014) Madrid, Spain.

[7] **M. M. Aish**, **Effect of structural defects on the deformation of metals under high strain** //International Conference on Advances in Applied Mathematics and Mathematical Physics: 19-21 Aug. 2014, Yildiz Technical University of Istanbul, Turkey.

[8] M.D. Starostenkov, **M.M. Aish**, Molecular **dynamic study for ultrathin Ni3Fe alloy**, XLI International Summer School - Conference "Advanced Problems in Mechanics" St. Petersburg, , Russia, June 30 - July 5, (2014) .Conference Proceedings Pages 491-497.

[9] M. M. Aish, M. D. Starostenkov, **Effect of vacancy on the structural deformation and mechanical strength of ultrathin Nickel nanowires** // the 20th European Conference on Fracture (ECF20), Norway on 30th June - 4th July 2014.

[10] M. D. STAROSTENKOV , M. M. AISH, SPECIFIC FEATURES OF PROCESSES DEFORMATION AND DESTRUCTION OF NANOBLOCKS OF NI OF DIFFERENT SIZES, // VIII Всероссийская конференция по механике деформируемого твердого тела 16 июня – 21 июня 2014 г., Чебоксары, Россия.

[11] Старостенков М.Д., Айш М.М. **МОЛЕКУЛЯРНЫХ ДИНАМИЧЕСКОЕ ИССЛЕДОВАНИЕ УЛЬТРАТОНКИХ СПЛАВА Ni3Fe** 55-й Международной конференции «Актуальные проблемы прочности» 9-13 июня 2014 г. Харьков, Украина.

[13] **M.M. Aish**, M. D. Starostenkov, **Modeling deformation and fracture in Ni nanowire plasticity using a 3D molecular dynamics** // The 7th Chaotic Modeling and Simulation International Conference (CHAOS2014), Lisbon Portugal on 7-10, June, 2014.

[14] M. D. Starostenkov, M.M. Aish, **Molecular Dynamic Simulations of Nickel nanowires at various temperatures using Cleri-Rosato potential**//3rd International Workshop on Physics Based Material Models and Experimental Observations, 2-4 JUNE, 2014, Cesme/Izmir – TURKEY.

2013conferences'

[1] M. D. Starostenkov, **M.M. Aish**, **Molecular dynamic study for ultrathin Nickel nanowires at the same temperature** // 3rd International Conference on Mathematics & Information Science (ICMIS 2013), Luxor, Egypt, 28-30 Dec. 2013.

[2] Aish M.M., Starostenkov M.D., **Molecular dynamic study for ultrathin Ni3Fe alloy**, 54 INTERNATIONAL CONFERENCE «ACTUAL PROBLEMS OF STRENGTH" RUSSIA, YEKATERINBURG, 11-15 NOVEMBER 2013.

[3] Starostenkov M.D., **Aish M.M., MOLECULAR DYNAMIC SIMULATIONS OF ULTRATHIN NICKEL NANOWIRES AT DIFFERENT TEMPERATURES** 54 INTERNATIONAL CONFERENCE «ACTUAL PROBLEMS OF STRENGTH" RUSSIA, YEKATERINBURG, 11-15 NOVEMBER 2013.

[4] M.M. Aish, M. D. Starostenkov, **Study of stress- strain behavior of different Nickel nanowires at 300k** // E-MRS 2013 FALL MEETING September 16-20, Warsaw University of Technology, Warsaw, Poland.

[5] M. D. Starostenkov, **M.M. Aish**, A. V. Yashin, **Molecular Dynamic Simulations of Nickel nanowires at different temperatures** // E-MRS 2013 FALL MEETING September 16-20, Warsaw University of Technology, Warsaw, Poland.

[6] M.M. Aish, M. D. Starostenkov, **Study the stress - strain behavior of different Nickel nanowires at the same temperature** // INTERNATIONAL CONFERENCE, Hierarchically built systems of organic and inorganic nature, Tomsk Russia September 9-13, 2013.

Research Statement:

I received my Ph. D. in June 2014 from Altai State Technical university, Russia. I studied the deformation and fracture characteristics of metallic nanowires and alloys depending on their shape and size.I have research interest involves studying and modeling the structure of nano-systems and complex materials using Molecular dynamic simulation and Monte Carlo method.

My resent study demonstrates the success of simulation in the study of the basic mechanisms of plasticity and failure nanowires at the atomic level. Currently, I work as a lecturer at the physics department at the University of Menoufia, Egypt. I have to do my own program to study properties of metallic nanowirse and/ or nanofilms.

Feature and future of my work:

Scientific and practical value of the work is that the results can be used for the development of the theory of plastic deformation in the study of deformation metallic nanowires and alloys, also can be used for the development of the modern understanding of the processes occurring at the micro level in solids. The mechanical properties of nanowires metals and alloys were useful for designing and manufacturing nanodevices. The results of computer simulation can be used as demonstration material for students of material science, for the possible creation of a laboratory practical.
