

ABDEL-NASSER ABDEL-HAMEED MOHAMED ZAYED

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PERSONAL INFORMATION

Date of birth: 23/12/1956

Place of birth: Alexandria

Marital status: Married

QUALIFICATIONS

- March 2010** **Professor** (Mechanical Engineering)
- April 2003** **Associate Professor** (Mechanical Engineering)
- Jan. 93 – Oct. 95:** **Degree: Doctor of Philosophy** (Mechanical Engineering)
College: Cranfield University, England.
Dissertation: Computed Tomography Applications in Ballistics
- Oct. 87 – Jun. 90:** **Degree: Master of Science** (Mechanical Engineering)
College: Military Technical College, Cairo.
Dissertation: Thermo-Structural Analysis of Rocket Nozzles by Means of Finite-Element Method
- Oct. 74 – Jul. 79:** **Degree: Bachelor of Engineering** (Mechanical Engineering)
College: Military Technical College, Cairo.
GPA: 3.226/4.0

SCIENTIFIC OCCUPATIONS

- 79-85: **Maintenance engineer** in the mechanical and armament laboratory, Maintenance and Repair Center for Naval Rockets, Naval Forces.
- 85-92: **Teaching Assistant** in the department of Rockets, Military Technical College, Cairo.
- 93-95: **Researcher** in Cranfield University, England to award the Ph.D. degree.
- 96-97: **Teacher** in the department of Rockets, Military Technical College, Cairo.
- 97-03: **Head of the Department** of Rockets, Military Technical College, Cairo.
- 03-06: **Head of the Branch** of Mechanical Engineering, Military Technical College, Cairo.
- 06-07: **Vice-Dean for Educational Affair**, Military Technical College, Cairo.
- 08-13: **Head of the Department** of Manufacturing Engineering, Modern Academy in Maadi, Cairo.
- 13-15: **Head of the Department** of Mechanical Engineering, College of Engineering, Pharos University, Alex.
- 15-17: **Vice-Dean + Head of the Department of Mechatronics**, Faculty of Engineering, Heliopolis University, Cairo.
- 19- : **Vice-Dean**, Faculty of Engineering, Nahda University in Bani-Suif.

- **External Reviewer** in the National Authority of Quality Assurance and Accreditation of Education (NAQAAE) from October 2010.

- عضو لجنة فحص وأعداد كلية الهندسة بالأكاديمية العربية للعلوم والتكنولوجيا - فرع الإسكندرية
- دعم فنى وإعداد الدراسة الذاتية للأكاديمية الحديثة بالمعادي
- دعم فنى وإعداد الدراسة الذاتية لكلية الهندسة وكلية الصيدلة جامعة فاروس
- دعم فنى لجميع كليات جامعة هليوبوليس (هندسة - صيدلة - إدارة أعمال)

TEACHING EXPERIENCES

- May 85 – Oct. 92** Teaching the following courses in the Military Technical College as a teaching assistant:
- Mechanics (I, II)
 - Aerospace Structure
 - Strength of Materials (I, II)
 - Machine Elements
- Nov. 95 – Dec. 07** Teaching the following courses in the Military Technical College as a teacher:
- Undergraduate:**
- Engineering Mechanics (Statics & Dynamics)
 - Strength of Materials (I, II)
 - Testing and Measurements
 - Finite Element Methods
 - Aerospace Structure
- Postgraduate:**
- Strength of Materials
 - Finite Elements (I, II)
 - Testing and Measurements
 - Aerospace Structure
- Sept. 08 – May 13** Teaching the following courses in *Modern Academy in Maadi*:
- Engineering Mechanics (I, II)
 - Manufacturing Engineering
 - CNC Programming (CAM)
 - Operations Research
 - Computer Aided Design (CAD)
- Sept. 13 – Feb. 15** Teaching the following courses in Faculty of Engineering, Pharos University:
- Mechanics (I, II)
 - Introduction to Manufacturing
- Sept. 15 – May 17** Teaching the following courses in Faculty of Engineering, Heliopolis University:
- Mechanics (I, II)
 - Computer Aided Design (CAD)
 - Production Engineering
- Sept. 19 - Now** Teaching the following courses in Faculty of Engineering, Nahda University:
- Mechanics (I, II)
 - Computer Aided Design (CAD)
 - Production Engineering

Teaching the following courses as a part-time member:

<i>Courses</i>	<i>Institute</i>
– Engineering Mechanics I (Statics) – Engineering Mechanics II (Dynamics)	AHIET (Alexandria Higher Institute of Engineering and Technology)
– Engineering Mechanics I (Statics) – Engineering Mechanics II (Dynamics)	AAST (Arab Academy of Sciences and Technology) Cairo
CNC Programming	Institute of Military Production
Aerospace Structures	Military Technical College

PUBLICATIONS

(I) Papers

- [1] A-N, Zayed and M. El-Maddah, “*Thermal Analysis of Rocket Nozzle by using the Finite Element Method*”, Proceeding of the 4-th International Conference in Aerospace Science and Aviation Technology, MTC, Cairo, May, 1991.
- [2] A-N, Zayed and M. El-Maddah, “*Stress and Strength Analysis of Rocket Nozzles by using the Finite Element Method*”, Proceeding of the 4-th International Conference in Aerospace Science and Aviation Technology, MTC, Cairo, May, 1991.

- [3] A-N. Zayed and B. Lawton, “**Comparative Study on the Computed Tomography Algorithms**”, Proceeding of SPIE’94 (Visual Communication and Image Processing) Sponsored by IEEE, Chicago, USA, Sept. 1994.
- [4] A-N. Zayed and B. Lawton, “**New Version of the Fourier Convolution Algorithm in the Computed Tomography Technique**”, Proceeding of SPIE’94 (Visual Communication and Image Processing) Sponsored by IEEE, Chicago, USA, Sept. 1994.
- [5] A-N. Zayed and B. Lawton, “**Computed Tomography System for Industrial Applications**”, Proceeding of the 3-rd IASTED Conference (Computer Applications in Industry), Cairo, Dec. 1994.
- [6] A-N. Zayed and B. Lawton, “**Implementation of a Computed Tomography System by using a Photo-Diode as a Radiation Detector**”, Proceeding of ASNT’95 (the American Society of Non-Destructive Testing), Las Vegas, USA, Mar. 1995.
- [7] A-N. Zayed and B. Lawton, “**Methods of Measuring the Burning Rate in Solid Rockets by using a Computed Tomography System**”, AIAA Paper 95-2594, 30-th AIAA Joint Propulsion Conference, San Diego, USA, Jul. 1995.
- [8] A-N. Zayed, “**Burning Rate Measurement in Solid Rockets by Means of a Pencil-like Gamma Ray Beam**”, Proceeding of the 7-th AMME (Applied Mechanics and Mechanical Engineering) International Conference, MTC, Cairo, 1996.
- [9] A-N. Zayed and B. Lawton, “**Factors Affecting the Image Quality in the Computed Tomography Technique**”, Proceeding of the 7-th International Conference on Aerospace Science and Aviation Technology, ASAT-7, MTC, Cairo, 1997.
- [10] A-N. Zayed, “**Experimental Investigation of Nozzleless Solid Propellant Rocket Motor**”, Proceeding of the 8-th AMME International Conference, MTC, Cairo, May 1998.
- [11] A-N. Zayed, “**Concrete Nondestructive Testing by Means of the Computed Tomography Technique**”, Proceeding of the 3-rd International Conference on Civil and Architecture Engineering, MTC, Cairo, Mar. 1999.
- [12] A-N. Zayed, “**Geometric Analysis of Cruciform and Triform Solid Propellant Grains**”, Proceeding of the 9-th International Conference in Aerospace Science and Aviation Technology, ASAT-9, MTC, Cairo, May 2001.
- [13] A-N. Zayed, “**Comparative Study on External Burning Solid Propellant Grains**”, Proceeding of the 10-th AMME International Conference, MTC, Cairo, May 2002.
- [14] A-N. Zayed, “**Geometric Analysis of Internal Burning Solid Propellant Grains**”, Proceeding of the 10-th AMME International Conference, MTC, Cairo, May 2002.
- [15] A-N. Zayed, et al, “**Design Procedure for Solid Propellant Combustion Chambers**”, 10-th International Conference on Aerospace Science and Aviation Technology, ASAT-10, MTC, Cairo, 2003.
- [16] A-N. Zayed, et al, “**Effect of Post-Chamber on Combustion Efficiency in Hybrid Rocket Motors**”, 10-th International Conference on Aerospace Science and Aviation Technology, ASAT-10, MTC, Cairo, 2003.
- [17] A-N, Zayed, et al, “**Effective Design Parameters of the Hybrid Rocket Motor**”, 11-th International Conference on Applied Mechanics and Mechanical Engineering (AMME), MTC, Cairo, 23-25 Nov. 2004.
- [18] A-N, Zayed, et al, “**Hybrid Rocket Motor Performance Prediction**”, 11-th International Conference on Applied Mechanics and Mechanical Engineering (AMME), MTC, Cairo, 23-25 Nov. 2004.

- [19] A-N. Zayed, “***Design Optimization and Geometric Analysis of the Slotted Solid Propellant Grains***”, Proceeding of the 11-th International Conference on Aerospace Sciences and Aviation Technology (ASAT-11), MTC. Cairo, 17-19 May 2005.
- [20] A-N. Zayed, et. al., “***Design Optimization of Composite Rocket Motor Cases using Genetic Algorithms***”, Proceeding of the 11-th International Conference on Aerospace Sciences and Aviation Technology (ASAT-11), MTC. Cairo, 17-19 May 2005.
- [21] A-N. Zayed, et. al., “***Calculation of Aerodynamic Heating of a Conical Forebody***”, Proceeding of the 11-th International Conference on Aerospace Sciences and Aviation Technology (ASAT-11), MTC. Cairo, 17-19 May 2005.
- [22] A-N. Zayed, et. al., “***Evaluating the Ablative Thermal Protection against Aerodynamic Heating for a Conical Fore-body***”, Proceeding of the 12-th International Conference on Aerospace Sciences and Aviation Technology (ASAT-12), MTC. Cairo, 29-31 May 2007.
- [23] A-N. Zayed, et. al., “***How to Determine the Design Parameter of an Artillery Rocket from the Tactical Requirement***”, Proceeding of the 12-th International Conference on Aerospace Sciences and Aviation Technology (ASAT-12), MTC. Cairo, 29-31 May 2007.
- [24] A-N. Zayed, et. al., “***Experimental Measurements of Missile Dynamic Characteristics***”, Proceeding of the 12-th International Conference on Aerospace Sciences and Aviation Technology (ASAT-12), MTC. Cairo, 29-31 May 2007.
- [25] A-N. Zayed, et al., “***Design Optimization of Satellite Structures***”, Proceeding of the 13-th International Conference on Aerospace Sciences and Aviation Technology (ASAT-13), MTC. Cairo, 26-28 May 2009.
- [26] A-N. Zayed, et. Al., “***Measuring of Solid Propellant Ballistics by Means of Ultrasonic Techniques***”, Alexandria Engineering Journal (AEJ), Vol. 48, Part 06, Nov. 2009.
- [27] A-N. Zayed, et. al., “***Thermal-Buckling Analysis of a Fluttered Square Panel***”, Proceeding of the 14-th International Conference on Aerospace Sciences and Aviation Technology (ASAT-14), MTC. Cairo, 25-27 May 2011.
- [28] A-N. Zayed, et. al., “***Optimum Nonlinear Response of Composite panels Subjected to Aerodynamic and Thermal Loadings***”, Proceeding of the 14-th International Conference on Aerospace Sciences and Aviation Technology (ASAT-14), MTC. Cairo, 25-27 May 2011.
- [29] A-N. Zayed, et. al., “***Experimental Determination of Mechanical Properties of Chopped Fiber Composite Materials***”, International Journal of Engineering Research & Technology (IJERT), Vol. 5, Issue 2, Feb. 2016.
- [30] A-N. Zayed, et. al., “***Experimental Determination of Thermal Properties of Chopped Fiber Composite Materials***”, Proceeding of the 17-th International Conference on Applied Mechanics and Mechanical Engineering (AMME), MTC, Cairo, 19-21 April, 2016.
- [31] A-N. Zayed, et al, “***Experimental Verification of chopped composite “Fiber glass/ phenol” as a Rocket Nozzle Insulation***”, Proceeding of the 18-th International Conference on Applied Mechanics and Mechanical Engineering (AMME), MTC, Cairo, 3-5 April, 2018.
- [32] A-N. Zayed, et al, “***Comparative Structural Analysis for Different Rocket Nozzle Profiles***”, Proceeding of the 19th International Conference on Aerospace Sciences and Aviation Technology (ASAT-19), MTC, Cairo, May 2021.
- [33] A-N. Zayed, et al, “***Impact of Nozzle Profile on Ballistic Performance and Structural Loads***”, Proceeding of the 19th International Conference on Aerospace Sciences and Aviation Technology (ASAT-19), MTC, Cairo, May 2021.
- [34] A-N. Zayed, et al, “***Investigating the Performance Analysis of the Internal Ballistic Shape of the Rocket Nozzle***”, Under Publication.

(II) Text Books

- A-N. Zayed, "*Standard for Machine Elements*", Printed Lecture, PL 1910, Military Technical College, Feb. 2001.
- A-N. Zayed, "*Rocket Testing*", Printed Lecture, PL 1914, Military Technical College, Feb. 2002.
- A-N. Zayed, "*Construction of Rockets*", Printed Lecture, PL 1915, Military Technical College, Feb. 2002.
- A-N. Zayed, "*Propulsion of Solid Propellant Rocket Motors*", Printed Lecture, Military Technical College, Dec. 2002.
- A-N. Zayed and M. El-Maddah, "*Aerospace Structure*", Printed Lecture, Military Technical College, May. 2003.
- A-N. Zayed and M. El-Maddah, "*Finite Elements*", Printed Lecture, Military Technical College, May. 2003.
- A-N. Zayed, "*Aerodynamics*", Printed Lecture, Military Technical College, May 2004.
- A-N. Zayed, "*WORLD MISSILES*", Reference Book, Military Technical College, No. 1922, Oct. 2004.
- A-N. Zayed, "*Operations Research*", Printed Lectures, Modern Academy in Maadi, May 2009.
- A-N. Zayed, "*Computer Aided Design*", Printed lectures, Modern Academy in Maadi, Jan. 2011.
- A-N. Zayed, "*Production Engineering*", Printed lectures, Modern Academy in Maadi, Jan. 2012.

(III) General Books

- A-N. Zayed, "*Summary for Engineers*", ISBN 977-987654-7, Cairo, Oct. 1997.
- A-N. Zayed, "*Summary for Engineers*", 2-nd Edition, ISBN 977-03-0647-9, Cairo, Nov. 1999.
- عبدالناصر زايد ، "الموسوعة الهندسية باللغة العربية" ، الرقم الدولي ٠-٦٤٦-٠٣-٩٧٧ ، القاهرة ، نوفمبر ١٩٩٩ .
- عبدالناصر زايد ، "الرياضيات الفرعونية" ، تحت الطبع.

SUPERVISING

- Ph. D. Degree, "*Hybrid-Rocket Motors*", Researched by A. E. Makled, Military Technical College, Feb. 2002.
- M. Sc. Degree, "*Aerodynamic Heating*", Researched by M. M. Yahia, Military Technical College, Dec. 2001.
- M. Sc. Degree, "*Applications of Conventional and Composite Materials in Design and Production of Solid Propellant Combustion Chamber Casing*", Researched by M. I. El-Geoshy, Military Technical College, June 2005.
- M.Sc. Degree, "*Aerospace Structural Optimization*", Researched by Lt.Col. Ahmed Seaf , Military Technical College, January 2009.

- M.Sc. Degree, "*Design Optimization of Solid Propellant Rocket Motor*", Researched by Libyan Maj. Wesam , Military Technical College, March 2009.
- M.Sc. Degree, " *Analysis of the Gas Generator in a Liquid Propellant Rocket Motor*", Researched by Libyan Maj. Abdel-Rahman, Military Technical College, March 2009.
- M.Sc. Degree, "*Missile Structures Analysis for Airframe Design*", Researched by Capt. Shereif Saleh, Military Technical College, Oct. 2010.
- Ph.D. Degree, "*Thermal Effects on Mechanical Properties of Composite Materials*", Researched by Col. Ahmed Sief, Military Technical College, Oct 2016.
- M. Sc. Degree, "*Structural Analysis of Different Nozzle Profiles*", Researched by Capt. Mohamed Saleh, Military Technical College, Still in Research.

REFEREE

- Referee for *21 theses* (4 doctor of Philosophy and 17 Master of Sciences)
- Referee for more than *60 papers* in International Conferences and Journals.
- Head or Member of session board for *19 sessions* in International Conferences.

MEMBERSHIPS

- 94 – 98: Member in the American Society of Nondestructive Testing “ASNT”.
- 95 – 98: Member in the American Institute of Aeronautics and Astronautics “AIAA”.

AWARDS

- Medal of the 1-st class from the Egyptian President for “Role Model”
- Medal of the 1-st class from the Egyptian President for “Long Military Service”

RESEARCHES

Four Researches in the Field of design, production, and improvement of Rocket Motors related to the Egyptian Armed Forces (*CLASSIFIED*).

