

AYA HUSSIEN MOSTAFA AL-TURKI

- **RESEARCHER** – AGRICULTURAL RESEARCH CENTER (ARC)
- **LECTURER** – PLANT PATHOLOGY DEPARTMENT, INSTITUTE OF AGRICULTURAL COOPERATION
- **FOUNDER** – BIOTECH ZONE

ABOUT ME

Accomplished Plant Pathologist and Virologist with 17+ years of experience in molecular biology, plant biotechnology, nanotechnology, and plant-based vaccine development. Holds a Ph.D. in Virology from Ain Shams University and currently serves as a Researcher at the Agricultural Research Center (ARC) and Lecturer in Plant Pathology at the Institute of Agricultural Cooperation. Founder of BioTech Zone and active Trainer at the Youth Committee of the Egyptian Syndicate of Scientific Professions, contributing to national capacity building in biotechnology and plant sciences. Recognized with a First Place Publication Award for pioneering transgenic vaccine research, with proven expertise in applying molecular and nanotechnological approaches to enhance crop protection, sustainability, and agricultural productivity.

Active Trainer at the Youth Committee of the Egyptian Syndicate of Scientific Professions, supporting scientific capacity-building and public engagement initiatives.

EXPERIENCE

● June 2025 – Present

FOUNDER | LECTURER

BIO-TECH ZONE ACADEMY

Is Responsible For:

- Designing and delivering lectures and workshops in biotechnology, microbiology, edible vaccines, and bioinformatics to students and professionals.
- Leading Bio-Tech Zone workshops in collaboration with FA Model across major Egyptian universities, including Cairo University, Ain Shams University (AST), Mansoura University, New Mansoura University, Heliopolis University, South Valley University, BUC, Marsa Matrouh University, and Damietta University.
- Partnering with key organizations such as the Agricultural Cooperation Organization and Pioneers of Biotechnology to deliver specialized training and awareness programs.
- Developing comprehensive educational content and practical modules tailored to different academic and industry levels.
- Supervising and mentoring students and trainees during hands-on lab sessions, experiments, and research presentations.
- Organizing and leading scientific workshops, awareness sessions, and technical training programs to enhance applied knowledge.
- Managing the overall educational strategy of the academy, including course planning, quality assurance, and outreach initiatives.

● June 2025 – Present

Assistant Auditor – Reviewer | Scientific Publishing Egyptian Journal of Virology

Is Responsible For

- Assisting as an Auditor with the Egyptian Journal of Virology, supporting the peer-review process by evaluating research quality, methodology, and scientific validity.

● Reviewer Al-Mukhtar Journal of Agricultural, Veterinary and Environmental Sciences

- Registered as a reviewer, evaluating manuscript submissions for scientific quality, methodology, and relevance.



CONTACT

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Jeddah, Saudi Arabia

Date of Birth

April 22, 1986

EDUCATION

Ph.D. in Virology (Biotechnology & Nanotechnology)

2025

- Ain Shams University
- Grade: Very Good

M.Sc. in Virology (Edible Vaccine)

- Ain Shams University 2014
- Grade: Very Good

Diploma in Biotechnology

- Ain Shams University 2012
- Grade: Excellent

B.Sc. in Microbiology | Faculty of Agriculture

- Ain Shams University 2007
- Grade: Good

2025 – Present

RESEARCHER

Molecular Biology and Biotechnology Unit, Virology Dept., Plant Pathology Research Institute, ARC

Thesis: Molecular Biology and Nanotechnology-Based Strategies for PVY in Potato Plants

Is Responsible For:

- Developing molecular and nanotech strategies to control Potato Virus Y (PVY) in crops.
- Designing and implementing experiments for disease resistance in agricultural plants.
- Collaborating with national research teams to boost food security and plant health.

2024 – Present

Lecturer

Higher Institute for Agricultural Cooperation

Was Responsible For:

- Delivering courses in plant pathology, virology, and molecular diagnostics.
- Supervising student research projects and promoting innovation in agricultural science.
- Organizing and conducting workshops and seminars to educate students and faculty on the latest developments in plant biotechnology.
- Collaborating with national and international research organizations to bring practical applications into the classroom and enhance student learning experiences.

2015 – 2025

Research Assistant

Molecular Biology and Biotechnology Unit, Virology Dept., ARC

Thesis: Application of biotechnology in plant-based vaccine production against Herpes simplex virus.

Was Responsible For:

- Assisting in the development of plant-based vaccines for viral diseases, focusing on edible vaccines against Herpes simplex virus.
- Conducting laboratory experiments, analyzing plant tissue samples, and generating molecular data for various research projects.
- Preparing and maintaining plant cultures, overseeing virus inoculations, and performing viral disease screenings.

2020-2023

Research Team member

Strawberry and Fingerprint Virus Research Project

Was Responsible For:

- Investigating viral infections in strawberries and analyzing molecular markers for plant fingerprinting to improve disease resistance.
- Conducting experiments to assess virus strains and their effects on crop yield and quality.
- Collaborating with colleagues on creating molecular diagnostic tools for virus detection in strawberry crops.

2019-2022

Research Team member

Tomato Family Viral Disease Research Project

Was Responsible For:

- Studying viral diseases affecting tomato crops in Egypt, analyzing the genetic basis of plant-virus interactions.
- Conducting field trials and laboratory research to develop virus-resistant tomato varieties.
- Documenting results and publishing findings to advance understanding of viral pathogens in the tomato family.

2008 – 2015

Assistant Researcher

Molecular Biology and Biotechnology unit; Virology Dept; Plant Pathology Research Institute ARC.

Was Responsible For:

- Contributing to research focused on viral diseases affecting cereal crops, collaborating with senior researchers to enhance plant health.
- Isolating and identifying plant pathogens using molecular techniques, such as PCR and sequencing.
- Supporting research on virus resistance in crops, assisting with experiments and data collection.

2008-2014

Research Team member

Cereal Family Viral Disease Research Project

Was Responsible For:

- Focusing on viral infections in cereal crops and contributing to the development of resistance strategies.
- Isolating viruses affecting various cereal crops and assessing their impact on yield and quality.
- Conducting extensive field and laboratory research to understand the transmission and control of viral diseases in cereals.

● 2010 – 2011

Lab Technician

Royal Laboratory

Was Responsible For:

- Performing diagnostic tests on various biological samples, maintaining lab records, and ensuring proper lab safety protocols.
- Assisting in virology-related research, preparing samples for molecular analysis, and supporting lab equipment maintenance.
- Working collaboratively with senior researchers to generate high-quality data for ongoing virology project

● 2008 – 2009

Lab Technician

Mohammed Beikheit Hospital

Was Responsible For:

- Maintaining laboratory equipment, sterilizing instruments, and ensuring safety and hygiene standards were met.
- Supporting medical staff with laboratory results, ensuring accurate data entry and timely reporting.
- Performing routine diagnostic tests and preparing biological specimens for analysis.

● 2008 – 2009

Lab Technician

El-Nasr Hospital

Was Responsible For:

- Processing laboratory samples for diagnostic testing and ensuring proper handling and storage of materials.
- Collaborating with medical teams to analyze lab results and contribute to patient diagnoses.
- Maintaining laboratory safety protocols, ensuring compliance with healthcare regulations.

● 2008 – 2009

Assistant Researcher

Agriculture Genetic Engineering Research Institute

Was Responsible For:

- Assisting in genetic engineering projects aimed at developing virus-resistant crops, focusing on practical applications in agriculture.
- Supporting laboratory experiments involving genetic modifications of plant tissues, collecting data, and documenting results

● 2007 – 2008

Lab Technician

Dr. Onsi Laboratory

Was Responsible For:

- Assisting in laboratory analyses, performing tests on biological samples, and maintaining accurate lab records.
- Preparing samples, performing basic lab procedures, and supporting senior researchers in experiments related to virology.
- Ensuring the cleanliness of laboratory equipment and compliance with safety protocols

ACADEMIC TEACHING & SCIENTIFIC ENGAGEMENT

- Lecturer at the Higher Institute for Agricultural Cooperation, delivering courses in plant pathology, virology, and molecular diagnostics, while supervising student research projects.
- Founder & Lecturer at Bio-Tech Zone Academy, designing and delivering specialized workshops in biotechnology, microbiology, edible vaccines, and bioinformatics across Egyptian universities in collaboration with FA Model (Cairo, Ain Shams, Mansoura, New Mansoura, Heliopolis, South Valley, BUC, Marsa Matrouh, Damietta).
- Trainer and workshop leader with national and international organizations, including the Agricultural Cooperation Organization and Pioneers of Biotechnology.
- Speaker and scientific presenter at multiple conferences and workshops, including the Egyptian Society of Virology and the Agricultural Research Center.
- Organizer and trainer of advanced technical workshops covering molecular diagnostics, nanotechnology, plant tissue culture, and plant virus bioinformatics.
- Mentor and supervisor for students and trainees in hands-on laboratory experiments, research projects, and scientific presentations.
- Recognized academic contributor, bridging scientific research with educational delivery through lectures, workshops, and curriculum development.

PUBLICATIONS

- Expression of recombinant gD2 protein in transgenic tomato plants for development of a plant-derived vaccine against human herpes virus 2
- Effect of CMV infection on basil active ingredients used to treat HCV ayapatiens
- Phylogeny of Three Species Belong to Genus Potyvirus Infecting Solanum tuberosum Based on Biological and Molecular Variability
- Genetic variability in hepatitis C virus associated with ABO blood group in Egypt

AWARDS

- **First Place Award – Egyptian Journal of Virology**

Awarded for outstanding research and publication titled: "Expression of Recombinant gD2 Protein in Transgenic Tomato Plants for the Development of a Plant-Derived Vaccine Against Herpes Simplex Virus-2."

COURSES | CERTIFICATIONS

- Certificates of Attendance the 9th international Science Conference of the Egyptian society of virology
- Organizing Committee Member – **9th International Conference, Egyptian Society of Physiology "Emerging Viral Threats from a One Health Perspective" | 2025**
- Certificate of Excellence in Peer-Reviewing BP International – Reviewer Hub | Recognized for an outstanding contribution to the quality of the book. | May 1, 2025

Book Title: **Microbiology and Biotechnology Research: An Overview** Manuscript Title: Antigen-Antibody Interactions in vitro: I. The Characteristics of Reactions in Tests for Antibodies to Viruses and Their Significance for Standard Assays and Adequate Routine Tests Recognized for an outstanding contribution to the quality of the book through expert peer review. | 2025

- Participated in workshop: **Enhancing Scientific Research and Sustainable Development. Agricultural Research Center, Egypt | 2025**
- Participated in the 11th Annual | 2023 Ain Shams University International Conference
- **Course: Nanobiotechnology – A Promising Tool for Sustainable Agriculture | 2022**
- Certificate of Participation | Educational Competencies Foundation

"Achieving Development and Advancing Societies through Nanotechnology Techniques" | 2020

- Certificate of Attendance – 5th International Conference of Virology Egyptian Society of Virology | December 9–12, 2014
- Training on Viral Diseases Affecting Vegetable Crops | 2013
- International Computer Driving License (ICDL) – Diploma in Microsoft Office and Windows | 2006
- Customer Service Training Course | 2006
- **Attended foundational courses in | 2005**

Self Management

Mind Mapping

Effective Leadership

Problem Solving

Decision Making

Effective Communication

Self-Learning

LECTURES DELIVERED

- **Diagnostic Techniques for Phytoplasma Diseases: Then and Now**

Agricultural Research Center (ARC) – Plant Pathology Research Institute | 23–25 June 2025

- Presented a scientific lecture titled "**The Potential Benefits of Plant Viruses for Plant and Human Health**" – 2025
- Active **Trainer** at the **Youth Committee of the Egyptian Syndicate of Scientific Professions**, supporting scientific capacity-building and public engagement initiatives.

LECTURES ATTENDED

- **Attended the first lecture in the course "International Publication of Scientific Research"**

organized by the Future Scientists Platform – June 23, 2025 (Speaker: Eng. Ibrahim Ashour, AI & Digital Transformation Trainer)

- **Attended a lecture titled "Common Diseases Among Date Palm and Other Palm Species" – May 7, 2025**

VOLUNTEERING & EXTRACURRICULAR ACTIVITIES

- Volunteer in a medical convoy providing healthcare services to rural Egyptian villages – 2007
- Customer Service Representative | Zedny Human Development Team – 2005–2006
- Member of the Psychological Support Team during high school – 2002–2003

WORKSHOPS & TRAINING ATTENDED

- Participated in an **online orientation session on "Elsevier Research Tools: Science Direct, Scopus, SciVal, and Funding Institutional"**, presented by Dr. Mohamed Raed, Client Success Manager at Elsevier Egypt – June 17, 2025
- Attended the **Agricultural Research Center Conference & Exhibition: Entrepreneurship Toward Sustainable Agricultural Development** – May 27–28, 2025
- Completed training on "**Carbon Footprint and Fundamentals of Carbon Footprint Calculation**" – May 19–20, 2025
- Participated in a **scientific meeting on "RNAi Plant Disease Control"** – May 14, 2025

WORKSHOPS & TRAININGS DELIVERED

- Online Workshop on Biotechnology and Nanotechnology – 2025
- Served as a trainer, delivering content and guiding participants through key concepts in biotechnology and nanotechnology.

Multiple Workshops 2024–2025

Acted as trainer and facilitator in the following workshops:

- Plant Tissue Culture and Increasing Agricultural Production – Explaining techniques and applications for higher crop yields.
- Plant Tissue Culture and Development of Egyptian Exports – Demonstrating methods to enhance export-quality plant products.
- Plant Virus Bioinformatics: Bridging Theory and Real-World Applications – Teaching computational approaches for plant virus research.
- Polymerase Chain Reaction (PCR) – Explaining the principles and laboratory applications of PCR.
- Plant Pathology (Online) – Providing instruction on diagnosing and managing plant diseases.
- Biotechnology (Online) – Teaching key concepts, methods, and innovations in biotechnology.
- In Vitro Fertilization (IVF) (Online) – Delivering training on IVF techniques and protocols.

CAREER SKILLS

- Molecular Diagnostics** – Skilled in detecting plant and human viruses using advanced molecular tools including PCR and sequencing.
- Biotechnology Applications** – Applying genetic engineering and nanotechnology techniques for vaccine development and crop improvement.
- Research & Data Analysis** – Conducting experimental research, analyzing lab results, and interpreting complex scientific data.
- Project Development** – Leading and contributing to multi-year scientific projects targeting viral diseases in crops.
- Academic Instruction** – Delivering lectures and training workshops in plant pathology, tissue culture, and virology.
- Advanced training and lecturing skills** by leading workshops and academic sessions on plant pathology, biotechnology, and molecular diagnostics for students and professionals.

PERSONAL SKILLS

- Critical Thinking
- Time Management
- Leadership
- Teamwork
- Communication
- Problem Solving

SOFTWARE SKILLS

- Microsoft Office
- Windows
- ICDL Certified

LANGUAGES

- Arabic** – Native Speaker
- English** – Good proficiency (written and spoken)
- German** – Fair proficiency (written and spoken)