



Dr. Tahsin Shoala

Head of Environmental Biotechnology Department, College of Biotechnology, Misr University for Science and Technology.

Associate Professor of Nanobiotechnology- College of Biotechnology - Misr University for Science and Technology – Egypt.

Certified International Professional Trainer (CIPT)-Missouri State University-FLDC- USA.

Innovation and entrepreneurship hub advisory committee membership, Misr University for Science and Technology.

Honorary president of NaQaa Nanotechnology Network - Egypt

Email address: tahsen.shoala@must.edu.eg

Mobile : (002) 01007816925

PERSONAL DETAILS

Marital Status: Married.

Nationality : Egyptian

QUALIFICATIONS / EDUCATION

August-2020: Upgraded to Associate Professor of Nanobiotechnology in Plant Pathology.

February 2017: Certified International Professional Trainer (CIPT)-Missouri State University- FLDC (Cairo University) - USA.

August-2012: Ph.D. - Molecular Biology - School of Biology - Newcastle University – UK.

September-2005: M.Sc. - Molecular Microbiology - School of Biology - Newcastle University – UK.

June-1996: B.Sc. degree in Plant Pathology-Faculty of Agricultural sciences- Merit- Benha University

EXPERIENCE

1998: Research Assistant at Plant Pathology Institute, Virus and Phytoplasma department, Agriculture Research Centre.

- Tissue culture techniques.
- Serological techniques (ELISA, Dot Blot, Tissue Blot, Southern Blot, Producing Polyclonal antibody for some viruses and Bacteria, Indexing, and different methods for infecting indicator hosts)
- Virus Purification

2000: Research Assistant at (Egyptian-French) project for the Stone fruits. My duties were Detection and Identification of stone fruits viruses.

2001: Research Assistant at GTZ project (Egyptian-Germany) for citrus trees. My duties were Detection and Identification of Citrus trees viruses.

2002: Research Assistant at (European-Egyptian) Potato Brown Rot Project. My duties were Detection and Identification of plant pathogenic bacteria specially *Ralstonia solanacearum* by using different techniques (Bioassay, Indicator hosts, Semi Selective Media, PCR, and Gel – Electrophoresis).

2004: Head of Research team at Potato Brown Rot Project face II. My duties were experimental design, studying the survival of *Ralstonia solanacearum* in soil, water, weed and plant debris. The main researches were conducted under prof. Derik Tomlinson and John Elphinstone (CSL-York-UK) supervision.

2004: Started my MSc course at Newcastle Upon Tyne University.

2005: My MSc project (Identification of *Ralstonia solanacearum* subtypes by using DNA analysis).

2008: PhD project (Molecular approaches to understanding Plant-Insect interaction to enhance pest control).

2008-2011: Teaching assistant at School of Biology-Newcastle University for the following modules

Plant biology, genetic engineer, Plant Pathology, Biochemistry, Biotic and abiotic stress, Plant physiology, Plant-Insect interaction, Microbiology and Histology.

August 2011: Head of Lab committee at college of Biotechnology, Misr University for Science and Technology.

March 2012 Up to now: Assistant Professor of Molecular Biology - College of Biotechnology - Misr University for Science and Technology - Egypt

Module leader of the following courses

Biology 101, Concept and Issues in Biotechnology 202, Comparative Biology 202, Plant Pathology 302, Biotechnology Research 401, Biotechnology seminar 402, Molecular Biology of biotic and abiotic stresses.

June 2013: A member in the quality control team at college of Biotechnology, Misr University for Science and technology.

December 2013-2015: Executive chief for Misr Development Entrepreneur Innovation Centre at Misr University for science and Technology.

June 2017- up to now: Head of Laboratory committee until now

January 2017- 2018: Deputy Director of the Career Development Centre – MUST- Egypt

March 2017 – up to March 2020: Deputy Director of Quality Control- College of Biotechnology - Misr University for Science and Technology – Egypt.

June 2021: Field Training Supervisor, College of Biotechnology, Misr University for Science and Technology.

September 2021: Innovation and entrepreneurship hub advisory committee membership, Misr University for Science and Technology

September 2021: Head of Environmental Biotechnology Department, College of Biotechnology, Misr University for Science and Technology.

2017 up to now: Trained more than 400 trainees (assistant, associate professors, and Teaching assistant staff) in the training program (course specification and curriculum design).

Supervision

B.Sc. Supervision

2010: Supervised two British undergraduate students during their graduation projects, School of Biology, Newcastle University, UK.

2013-up to now: Supervising around 100 students during their graduation project.

M.Sc. Supervision

April 2011: Supervised MSc student, School of Biology, Newcastle University, UK.

January-2014: Supervised Teaching Assistant student, Microbiology Department, Faculty of Science, Ain shams University.

January-2018: Supervised Teaching Assistant student, Nutrition Department, Faculty of Home Economics, Helwan University.

September- 2019: Supervising student, Plant Pathology Department, Faculty of Agriculture, Benha University.

September- 2020: Supervising Teaching Assistant, Plant Pathology Department, Faculty of Agriculture, Benha University.

April-2021: Supervising student, College of Biotechnology, Misr University for Science and Technology.

September- 2021: Supervising graduate student, Plant Biotechnology Department, Faculty of Science, Benha University.

September- 2021: Supervising graduate student, College of Computing and Information Technology, Arab Academy for Science, Technology, and Maritime Transport.

Ph.D. supervision

September-2018: Supervise Teaching Assistant student, Plant Pathology Department, Faculty of Agriculture, Ain Shams University.

September-2019: Supervising student, Surgery Department, Faculty of Veterinary, Cairo University.

Conferences

November 2004: Attending PCBC conference at Glasgow- United Kingdom.

July 2006: Attended and presented a poster in the 4th International Bacterial Wilt Symposium (17 - 20 July 2006) York, England, United Kingdom Venue - The Lakeside Conference Centre, Central Science Laboratory, York, UK.

March 2013: Attending 10th National Conference of Biochemistry and Molecular Biology & Their Role in Development and Environment at Ain Shams University.

April 2013: Taking a part in a new IAU project on Equitable Access and Success in Higher Education.

June 2013: member of the organization of CIRCLE - ARAMFO Conference with American universities delegation at Misr University for Science and technology.

December 2013: organizing Science Fair day for Biology 101 students

December 2013: Attending Biotic Stress: from Gene to Field conference at Misr University for Science and Technology.

March 2014: Invited Speaker at Soul conference, Cairo University.

March 2014: Organizing Egypt-Nobel opening session at Misr University for Science and Technology.

September 2014: Organizer of Naqaa-MEDIC MUST Scientific symposium about (Basics in nanotechnology in Biology)

October 2014: Invited speaker in the 3rd International Conference and Exhibition on Cell & Gene Therapy October 27-29, 2014 Embassy Suites Las Vegas, USA.

December 2015: Invited speaker and organizer in the international conference of nanotechnology, Sadat University, Egypt.

March 2016: honorary president and speaker in the international conference of Nanotechnology, Cataract Pyramid hotel, Egypt.

April 12-13- 2016: Invited speaker in REGENERATIVE MEDICINE WORKSHOP, FACULTY of MEDICINE, MENOUIA UNIVERSITY , Egypt.

May 2016: Invited speaker in the biotechnology festival in the National Research centre, Egypt.

December 2016: Invited speaker in **Sino-Egyptian Forum 12-16 December (One built and One Road Initiative)**

March 2017: honorary president and speaker in the international conference of Nanotechnology, Cataract Pyramid hotel, Egypt.

October 2017: Invited speaker and member of the scientific committee of the International Egyptian Czech Conference for Nanotechnology Applications in Agriculture Sector (IECCNA).

October 2017: Invited speaker in the 7th International conference for the Arabic Union for Environment and Sustainable Development.

October 2018: Organizer and member of the scientific committee of the 8th International conference for the Arabic Union for Environment and Sustainable Development (**Health and environment within the framework of sustainable development**)

November 2018: Invited speaker at Faculty of Science Al Azhar University (Application of Nanotechnology in Biology).

November 2018: Organizer and member in the scientific committee of the 4th International conference for Environment and Sustainable Development (ISCESD).

April 2019: Organised nanotechnology workshop at plant pathology department, Faculty of Agriculture, Benha University.

1st of July 2019: Head of scientific committee and invited speaker in the workshop which entitled "Desertification and Sustainable Development Goals" which has been held at Opera House Doki, Giza Egypt.

30-31 July 2019: attended the 7th national conference for youth under patronage of Egyptian President Abd El Fattah El Sissi.

20-22 July 2019: Attended and the head of session in the conference of Era of Biotechnology and Personalized Medicine which has been held in the Cataract Pyramids Resort, Haram Giza, Egypt.

30th of September 2019: The ninth meeting of the National Authority for Quality Assurance and Accreditation of Education "Strategic partnership and unity of purpose".

17th of July 2020: New Future green company scientific meeting, presented online lecture entitled “Application of Nanotechnology in Plant protection”

6th of September 2020: Organiser and member of Scientific Committee of online 10th International Conference for Arab Union for Sustainable Development entitled “The economy and the challenges of the stage”

22nd of September 2020 (Nour El Huda Company) Scientific online conference: Presenting lecture titled “International Publication”

November 2020: Misr-Tunis company online conference, presented lecture titled “Adaptation of agricultural systems to climate change”.

26 of November 2020: Organiser of the 1st conference of college of Biotechnology, Misr University for Science and Technology, entitled “Biotechnology as one of the Emerging Technologies”

14th-15th of August 2021: Organiser and presenter in the 7th International conference for Stem Cell Therapy and Regenerative Medicine entitled “Animal Biotechnology and Veterinary Medicine”.

Member in the editorial board and Reviewer of the following international journals

- **Editor in Chief in the International Journal of Scientific Research and Sustainable Development (IJSRSD) (ISSN 2537_ 0715).**
- **Reviewer in the International journal of New Phytologist – ISSN: 0028-646X(Print); 1469-8137 (web)**
- **Reviewer in the International journal of microbiology and nanotechnology- PSM publisher- ISSN 2517-9586)**
- **Reviewer in the Journal of Plant Pathology & Microbiology (ISSN: 2157-7471).**

Societies membership

- 1. Royal Society of Biology - UK**
- 2. American Society of Phytopathology -USA**
- 3. Experimental Biology- UK**
- 4. Arab Federation for Sustainable Development**

MSc project techniques

- Using Lateral Flow Kite for detection and identification of Potato Bacterial wilt disease *R.solanacearum*.
- DNA extracting from infested potato tubers, tissues, and cultures.
- Using PCR and Gel Electrophoresis for detection and identification of 800bp in the 16SrRNA and Interspacer region (16SrRNA-23SrRNA).
- PCR product and Gel Electrophoresis bands Purification by using special kits for this purpose.
- DNA lyophilisation and sequencing.
- Identification of Tandem repeats by using mreps program.
- Designing primers from tandem repeat sequences (*Ralstonia Solanacearum* genome)
- Sequence analysis by using NCBI website.
- Using Real Time PCR.
- Generating Phylogeny trees.

PhD techniques:

- RNA extraction and quantification
- mRNA isolation and purification.
- DNA extraction
- Constructing cDNA library.
- suppression subtractive hybridisation (SSH) and PCR techniques.
- cDNA library were characterized by sequencing selected clones.
- Using ELISA, northern blot, and QRT-PCR to check gene expression for control and wounded plants.
- Sequence analysis by using specific software.
- QRT-PCR primer design
- QRT-PCR
- SDS PAGE and 2D gel electrophoresis.

Publications

- **Shoala, T. Ahmed A. Al-Karmalawy, A.A., Mousa O. Germoush, M.O., ALshamrani, S.M., Abdein, M.A. and Awad, N.S. 2021.** Nanobiotechnological Approaches to Enhance Potato Resistance against Potato Leafroll Virus (PLRV) Using Glycyrrhizic Acid Ammonium Salt and Salicylic Acid Nanoparticles. **Just Accepted: 7 October 2021, Horticulturae, Publisher MDPI, Q1.**
- **Amer, A., Ghoneim, M., Shoala, T. et al. 2021.** Comparative studies of eco-friendly compounds like humic acid, salicylic, and glycyrrhizic acids and their nanocomposites on French basil (*Ocimum basilicum* L. cv. Grand verde). *Environ Sci Pollut Res* 28, 47196–47212. <https://doi.org/10.1007/s11356-021-14022-1>.
- **Shoala, T. 2021.** Dual Role of Nanoparticles in Plant Growth and Phytopathogen Management. Chapter 10 In: Avinash P. Ingle, ed., *Nanotechnology in Plant Growth Promotion and Protection: Recent Advances and Impacts*. <https://doi.org/10.1002/9781119745884.ch10>
- **Shoala, T., Monir, G.A., Amin, B.H. 2021.** Effects of Salicylic Acid in The Normal and Nano Form Against Selected Fungi That Infect Citrus Trees (*Citrus sinensis*). *International Journal of Scientific Research and Sustainable Development*, Volume 4, Issue 2, 1-14.
- **Alakhdar, H.H., Shoala, T. 2021.** Exogenous application of hydrogen peroxide in different resistant bean cultivars of *Phaseolus vulgaris* to *Tetranychus urticae* (Acari: Tetranychidae). *Arthropod-Plant Interactions* 15, 439–445. <https://doi.org/10.1007/s11829-021-09829-1>.
- **Abdel-Rahman, F.A.; Khafagi, E.Y.; Soliman, M.S.; Shoala, T.; Ahmed, Y. 2021.** Preharvest application of salicylic acid induces some resistant genes of sweet pepper against black mold disease. *Eur. J. Plant. Pathol.* 159, 755–768, doi:10.1007/s10658-020-02199-z.
- **Shoala, T. El-Attar, A.K., Abd El Maksoud, A.I. 2020.** In-vitro management of Potato Leafroll Virus (PLRV) by using active material of different natural products. *J. of Virol. Sci.*, Vol. 7: 19- 31, 2020 ISSN: 2636-2937.
- **Abd Elbaky, M.S., Shoala, T., Abdelwahab, M.H. 2020.** Special effects of parsley (*Petroselinum crispum*) on streptozotocin-induced diabetic rats: biochemical profiles. *International Journal of Sustainable Development and Science* 3(3). DOI: 10.21608/IJSRSD.2020.134873.

- **Abdel-Rahman, F.A.; Rashid, I.A.; Shoala, T. 2020.** Nanoactivities of natural nanomaterials rosmarinic acid, glycyrrhizic acid and glycyrrhizic acid ammonium salt against tomato phytopathogenic fungi *Alternaria alternata* and *Penicillium digitatum*. *J. Plant. Prot. Res.* 60, 150–160.
- **Tahsin Shoala, T. and Hashem A.S. 2020.** Optimistic Influences of Nanotechnology on Food Security and Agriculture In: Keswani, C., ed., *Intellectual Property Issues in Nanotechnology* (1st ed.). CRC Press. <https://doi.org/10.1201/9781003052104>.
- **Amer, A. and Shoala, T. 2020.** Physiological and phenotypic characters of sweet marjoram in response to pre-harvest application of hydrogen peroxide or chitosan nanoparticles. *Scientia Horticulturae*, Volume 268, 27 June 2020, 109374.
- **Hammam, K.A., Shoala, T. 2019.** Influence of spraying Nano-curcumin and Nano-rosmarinic acid on growth, fresh herb yield, chemicals composition and postharvest criteria of French basil (*Ocimum basilicum* L. var. Grand Vert) plants. *J Agri Rural Res* 5(1):1–22.
- **Shoala, T., Eid, K.E., EL-Fiki, I.A.I. 2019.** Impact of Chemotherapy and Thermotherapy Treatments on the Presence of Potato Viruses PVY, PVX and PLRV in Tissue-Cultured Shoot Tip Meristem. *J. of Plant Protection and Pathology*, Mansoura Univ., Vol 10 (12): 613-617.
- **Shoala, T., Abd-El-Aziz, R.M. 2019.** Silver and Magnetic Iron Oxide Nanoparticles-Assisted PCR for the Phytopathogenic Bacteria *Ralstonia solanacearum*. *J. of Plant Protection and Pathology*, Mansoura Univ., Vol 10 (9):471-476.
- **Shoala, T. 2019.** Carbon nanostructures: detection, controlling plant diseases and mycotoxins. In: K. A. Abd-Elsalam, ed., *Carbon Nanomaterials for Agri-Food and Environmental Applications*, Elsevier publisher, 2019, ISBN: 0128197870, 9780128197875, pages 261-277.
- **Hamed, N. A., Salah, M., Ahmed, M. F., & Shoala, T. (2019).** Physiological Assessment of Radiation and PVP/ Zn-Nanoparticles on Sour Orange Seedling. *Asian Journal of Agricultural and Horticultural Research*, 4(4), 1-18. <https://doi.org/10.9734/ajahr/2019/v4i430033>.
- **Mabrouk, S. S.H., Monir, G.A., Shoala, T.2019.** Biological and Chemical Control of Powdery Mildew (*Sphaerotheca pannosa* (Wallr.) var. persicae) in Apricot. *International Journal of Sustainable Development* 2(1):1-19.

- **Shoala, T. 2019.** Nanodiagnostic Techniques in Phytopathogens. In: K. A. Abd-Elsalam and R. Prasad, ed., Nanobiotechnology Applications in Plant Protection, Springer Publisher, 1st ed 2nd volume. https://doi.org/10.1007/978-3-030-13296-5_11.
- **Awad, A. M., El-Abbasi, I. H., Shoala, T., Youssef, S. A., Shaheen, D., & Amer, G. A. (2019).** PCR and Nanotechnology Unraveling Detection Problems of the Seed-borne Pathogen *Cephalosporium maydis*, the Causal Agent of Late Wilt Disease in Maize. International Journal of Nanotechnology and Allied Sciences, 3(2), 30-39. Retrieved from <https://journals.pmpublishers.org/index.php/ijnas/article/view/305>.
- **Shoala, T. 2019.** Nanobiotechnology Applications in Plant Protection, Volume 2. In: K. A. Abd-Elsalam and R. Prasad, ed., Nanobiotechnology Applications in Plant Protection, volume 2. [online] Springer International Publishing AG, part of Springer Nature 2019, pp.209-219.
- **Khalid E. Eid, K.E., EL-Sayed, A.B.B., Shoala, T. 2018.** Gas chromatography-mass spectrometry (GC-MS) analysis of sugar beet leaf extracts in response to exogenous application of resistance inducers to manage sugar beet powdery mildew. *Egypt. J. Phytopathol.*, Vol. 46 No. 1, pp. xx-xx.
- **Shoala, T. 2018.** Positive Impacts of Nanoparticles in Plant Resistance against Different Stimuli. In: K. A. Abd-Elsalam and R. Prasad, ed., Nanobiotechnology Applications in Plant Protection, 1st ed. [online] Springer International Publishing AG, part of Springer Nature 2018, pp.267-279. Available at: <https://link.springer.com/book/10.1007/978-3-319-91161-8>.
- **Ahmed, H.S, Ahmed, M.F., Shoala, T., et al. 2018.** Impact of Single or Fractionated Radiation and Selenium Nano-particles on Acid Lime (*Citrus aurantifolia* L.) Seed Germination Ability and Seedlings Growth. *Adv Agr Environ Sci.*, 1(2): 91–100. DOI: 10.30881/aaeoa.00016
- **Shoala, T. 2018.** Positive Impacts of Nanoparticles in Plant Resistance against Different Stimuli. In: K. A. Abd-Elsalam and R. Prasad, ed., Nanobiotechnology Applications in Plant Protection, 1st ed. [online] Springer International Publishing AG, part of Springer Nature 2018, pp.267-279. Available at: <https://link.springer.com/book/10.1007/978-3-319-91161-8>.
- **Shoala, T., Edwards, M.G., Knight, M.R., Gatehouse A.M. R. 2018.** OXI1 kinase plays a key role in resistance of Arabidopsis towards aphids (*Myzus persicae*). *Transgenic Res* 27: 355.

- **Hassanein, N., Shoala, T., Gouda, S. (2018).** In vitro Studies on Biological Control of Drechslera species Causing Brown Spot Disease in Rice Plants. *PSM Microbiology*, 3(2):43-54.
- **Al-Dhabaan, F.A., Yousef, H., Shoala., Shaheen, J., El Sawi, J.Y., Farag, T. 2017.** Enhancement of fungal DNA templates and PCR amplification yield by three types of nanoparticles. *Journal of Plant Protection Research* 58 (1): 7.
- **Al-Dhabaan, F. A., Shoala, T., Ali, A. A. M., Alaa, M., Abd-Elsalam, K. 2017.** Chemically-produced copper, zinc nanoparticles and chitosan-bimetallic nanocomposites and their antifungal activity against three phytopathogenic fungi. *International Journal of Agricultural Technology* 13(5): 753-769.
- **Shoala, T. 2015.** The role of nanotechnology in plant pathology. The 4th International conference “Nanotechnology, Biotechnology and Spectroscopy: tools of success in the coming Era” 27 -29 March 2015 Cataract Pyramids 5 stars Resort Giza, Egypt.
- **Shoala, T. 2016.** Application of nanotechnology in biology. The second international conference of Regenerative medicine, 12-13 April 2016, Faculty of Medicine, MENOUIA UNIVERSITY, Egypt.
- **N. Parkinson, T. Shoala, J. Danial, E. Bliss and J. Elphinstone.** Analysis of small tandemly repeated DNA sequences reveals different genotypes within the pandemic biovar 2 *Ralstonia solanacearum* strains.
- **Parkinson N;Danial J; Shoala T; Bliss E;Elphinstone J; (2006)** High-resolution discrimination of types within the pandemic *Ralstonia solanacearum* B2R3 clonal strain using tandem repeat analysis. *Proceedings of the 11th International Conference on Plant Pathogenic Bacteria* (Symposium A),116.
- **Tomlinson, D.T., J.G. Elphinstone, M.S. Hanafi, T.M. Schoala et al. 2005.** Survival of *Ralstonia solanacearum* biovar 2 in canal water in Egypt. In *Potato in progress: Science meets practice*, eds. A.J. Haverkort and P.C. Struik, 228–232. Wageningen: Wageningen Academic Publishers.
- **Tomlinson, D. L., Elphinstone, J. G., Soliman, M. Y., Hanafy, M. S., Shoala, T. M., Abd El-Fatah, H., et al. 2009.** Recovery of *Ralstonia solanacearum* from canal water in traditional potato-growing areas of Egypt but not from designated Pest-Free Areas (PFAs). *European Journal of Plant Pathology*, 125, 589–601.

TRAINING COURSES

1994: Attending practical program belongs to Faculty of agriculture –Plant Disease department Zagazig University in the following Companies (Pioneer for producing new varieties of corn-Bayer for producing pesticides –Novartis for producing Pesticides Pathology Institute – Agriculture Research Centre.

1999: Molecular techniques for detection and identification of Plant Pathogenic bacteria at plant pathology department.

2001: MSc student in the Faculty of Agriculture-Plant Disease Department- Cairo University.

2002: Toefl preparation course at AMIDEAST, El- Doki-Giza,Egypt.

2003: Attended an intensive course for nine weeks at the International Language Institute, Heliopolis, and Cairo, Egypt.

2003: IELTS preparation course in the British council, El -Agoza.

2004: Academic writing course in the British council, El -Agoza.

March2004: Attended Practical program for molecular techniques in the chemistry department –Faculty of Agriculture – Cairo University.

July 2004: English language course in the English language Centre- Newcastle University.

Sep 2004: Attended MSc- full taught-Integrated Pest Management program at school of Biology- Newcastle upon Tyne University.

2008-2012: Attended different scientific courses and skills related to my PhD program at school of Biology-Newcastle University- England.

June 2013: Attended teaching quality control at Misr University for Science and technology.

January 2014: Attended teaching quality control at Misr University for Science and technology.

February 2017: Attended Certified International Professional Trainer (CIPT) Program and qualified as a Certified International Professional Trainer (CIPT).

July 2018: Attended quality control training program (Course specifications).

July 2019: Attended quality control training program (strategic planning).

October 2019: Attended quality control training program (External reviewing).

Training Courses at Newcastle upon Tyne University

- Attended radiochemical training.
- Biosafety training.
- Fire marshal training.
- Biohazard training.
- Real Time PCR.
- Microarray
- 2D gel electrophoresis
- MALDI

INTERESTS / HOBBIES

Football-Handball-Chess-Walking -Reading