Amir Hameed

Email: amirhameed73@gmail.com | **Tel:** +92 333 6522076

Address: House # 184, Street # 3, Mohala Altaf Ganj, Jhang Road, Faisalabad, Pakistan

Verified profiles at Google Scholar and ResearchGate

Education History

2010-2016 | **Ph.D. Biotechnology** CGPA 3.67/4
NIBGE, Faisalabad, Pakistan; PIEAS, Islamabad, Pakistan; BTI Cornell University USA
Specialization in Molecular Virology, RNAi, Plant-microbes interactions, Genetic engineering
Thesis title: "Use of RNA interference technology for multiple gene silencing in potato"

2007-2009 | **Masters Horticulture** CGPA 3.64/4
University of Agriculture Faisalabad, Pakistan
Specialization in Pomology, Olericulture, Nutrition
Thesis title. "Effect of humic acid and multi-nutrients on the yield and fruit quality of citrus"

2003-2007 | **Bachelors Agriculture and Horticulture** CGPA 3.28/4
University of Agriculture Faisalabad, Pakistan

Skills

Molecular Biology: working with DNA/RNA including Southern, Northern hybridization, DAS-ELISA, qRT-PCR, RCA. Vector designing, construction, and cloning.

Bioinformatics: Sequence analysis, alignments, phylogeny, statistical analysis, generating aesthetic yet meaningful manuscript figures.

Plant Transformation / Tissue Culture: Gene transformation in potato, tobacco, cotton, including regeneration, root induction and acclimatization.

Writing: I'm an author of more than 14 scientific articles for top journals in my field like *Frontiers in Plant Science, Trends in Biotechnology, Plant Disease*.

Presentation: I've delivered oral and poster presentations at versatile platforms including Cornell University USA, NIBGE Pakistan.

Editorial: I've review edited manuscripts for scientific journals including Plant Disease, The Plant Pathology Journal.

Management: Organizer in several conferences/science exhibitions/seminars. I've also organized several tours and field visits for sample collection.

Awards and Grants

- SRGP-**research grant** by HEC Pakistan 2017
- IRSIP **research grant** by HEC Pakistan for a research fellowship at Cornell, NY, USA 2011
- Ph.D. **Fellowship** from Higher Education Commission (Pakistan) 2010
- University Merit **Scholarship** in Masters 2007
- Gold medal on 1st position in Inter Science Fair 2002

Career Summary

02/2018 – Present | **Assistant Professor: Akhuwat-FIRST, Pakistan**
Project: Micropropagation of disease-free potato seed.

10/2016 – 10/2017 | **Assistant Professor, Govt. College University, Faisalabad, Pakistan**
Project: Genetic diversity of DNA viruses affecting potato crop.

01/2015 – 03/2016 | **Researcher, NIBGE, Faisalabad, Pakistan**
Project: USDA/ICARDA Cotton Productivity Enhancement Project "Gene Construct 1198-8".

10/2011 – 05/2012 | **Research fellow-visiting: BTI Cornell University, USA**
Project: Genetic transformation of potato resistant to viruses and CIS.

01/2010 – 01/2016 | **PhD Scholar: NIBGE, Faisalabad, Pakistan**
Project: Use of RNA interference technology for multiple gene silencing in potato.

01/2009 – 10/2009 | **Researcher, AARI, Faisalabad, Pakistan**
Project: To determine the optimum maturity indices of various mango verities to enhance export and minimizing post-harvest losses.

Language Proficiency

English	**Urdu**	**Punjabi**
Proficiency Certificate	First language	Area language

Research activities during Ph.D.

My long-standing interest has been in plant genetic engineering for traits improvement. My Ph.D. project was entitled "Use of RNA interference technology for multiple gene silencing in potato (*Solanum tuberosum* L.)" focused on molecular improvement of potato crop to resist against biotic and abiotic stresses. Basically, I was involved in three projects as a part of my Ph.D. dissertation. The first project was to investigate the genetic diversity of multiple viruses prevailing in potato crop across Pakistan. Based on the generated data, I reported the dominating viruses (Hameed et al., 2014; 2017), and designed an RNAi cassette to engineer resistance against three viruses (Hameed et al., 2017). In context to host genome editing in potato, I have used the RNAi technology to silence the host vacuolar invertase gene (*Vlnv*) in potato, predominantly involved in CIS (Cold-induced sweetening; Hameed et al., 2018). During this period, I have hands on experience in plant molecular biology including designing and constructing complex vectors, plant tissue culture, transgene analysis, gene expression, HPLC, ELISA, RT-PCR, characterization of transgenic plants under field conditions, and statistical analysis of data.

Post-Ph.D. research activities

Currently, I am working as assistant professor and working in a project entitled "Micropropagation of disease-free potato seed" at Akhuwat, Faisalabad Institute of Research Science and Technology (FIRST), Faisalabad, Pakistan. Before joining the current position, I was working as a researcher in Pak-USDA-ICARDA research project entitled "cotton productivity enhancement by effective management of cotton leaf curl disease". The project had many components which range from a genomic diversity of prevailing viruses in cotton, virus-resistant germplasm screening as well as the development of new germplasm resources. The part of my assigned work was primarily concerned with cassette designing and generation of transgenic cotton through *Agrobacterium*-mediated tissue culture.

Teaching experience

- At Akhuwat-FIRST, Faisalabad, Pakistan (Since February, 2018), supervising B.Sc. (Hons) Biotechnology students (5); 1-year Project (In progress). Teaching courses; (1) Recombinant DNA Technology, (2) Techniques in Biotechnology, (3) Plant Sciences.
- At Department of Biotechnology and Genetic Engineering, Govt. College University Faisalabad, Pakistan (Assistant Professor Sep, 2016-Sep, 2017). Supervised two B.Sc. (Hons) Biotechnology students (6 months project; completed). Teaching courses; (1) Introduction to Biotechnology, (2) Essential Techniques in Biotechnology, (3) Agricultural Biotechnology, (4) Industrial and Environment Biotechnology, (5) Applications of Biotechnology, (6) Molecular Biology, (7) Food Biotechnology.
- Trained many M. Phil and Ph. D students with regarding molecular techniques, gene cloning, plant tissue culture, plant transformation, RT-PCR, ELISA, Southern Blotting, *etc.*

Future interests and goals

With the new frontiers of science, I have developed a great appreciation for the extraordinary power of new breeding technologies (CRISPR/TALENs) as a research tool for precise genome editing/modification (Hameed et al., 2018, 2019). By utilizing these techniques, off-site silencing risks could be significantly minimized and feasibility in multiplexing to simultaneous target/edit multiple genes could be achieved.
If I got a chance to work in your competitive research group it would be the perfect combination for me to excel myself with the strength of both applied as well as basic research skills. I am an ambitious, hardworking, open-minded and social person, who likes to work in the lab as a team player.

Conferences Organized and Presented

- 3rd National Symposium on Advancement in Biotechnology (GCUF, **Organization** December 20-23, 2016.
- 2nd National Conference on Biological Sciences at NIBGE, Pakistan. **Organization** 2015.
- USDA and ICARDA annual meeting at NARC, Islamabad. Pakistan. **Oral** 2015.
- Use of Bioinformatics in High Throughput Sequencing. at NIBGE Pakistan. **Organization** 2015.

- 1st National Student Conference on Biological Sciences. (NIBGE, March 27-28, 2014, **Oral** "RNA interference technology for potato improvements".
- International Conference on "Biotechnology: Prospects & Challenges in Agriculture, Industry, Health & Environment (NIBGE, April 22-26, 2013) **Poster.**
- One day awareness workshop on "Genotyping by Sequencing: Overview and Application in Crop Improvement" (NIBGE, February 07, 2013).
- National Training Workshop on "Transgene Expression and Analysis in Plants" (NIBGE, October 2-5, 2012).
- Seminar on "Biotechnology & Food Security in Pakistan" (NIBGE, MAY 22, 2012).
- Workshop on "Insect genomics: Applications and Potential for Pest Control (NIBGE, March 25, 2009).
- Workshop on "Supercritical fluid extraction technology for high-value non-traditional crops" organized by Institute of horticultural sciences (University of Agriculture, Faisalabad. September 2008).

Training

- "Laboratory Safety Training" at BTI, Cornell, USA 2011
- "Tissue Culture Training" at BTI. Cornell, USA 2012
- "Lab Biosafety" at NIBGE, Pakistan 2010

List of Publications

Impact factor: 42 **Citations:** 107 **h-index:** 6 **i-10 index:** 4

1. **Hameed A**, Mehmood MA, Shahid M, Fatma S, Khan A & Ali S **(2019).** Prospects for potato genome editing to engineer resistance against viruses and cold induced sweetening. GM Crops and Foods. DOI: 10.1080/21645698.2019.1631115 **IF=3.3**
2. **Hameed A**, Zaidi SSA, Sattar MN, Iqbal Z, & Tahir MN (**2019**). CRISPR technology to combat plant RNA viruses: A theoretical model for Potato virus Y (PVY) resistance. Microbial Pathogenesis. https://doi.org/10.1016/j.micpath.2019.103551**IF=2.5**
3. **Hameed A**, Zaidi SSA, Shakir S, & Mansoor S (**2018**). Applications of new breeding technologies for potato improvement. *Frontiers in Plant Science*. doi:10.3389/fpls.2018.00925. **IF**=**4.1**
4. Khan MZ, Amin I, **Hameed A** & Mansoor S (**2018**). CRISPR/Cas13a: Prospects for plant virus resistance. *Trends in Biotechnology*. doi:10.1016/j.tibtech.2018.05.005. **IF**=**13.6**
5. **Hameed A**, Bilal R, Latif F, Van Eck J, Jander G & Mansoor S (**2018**). RNAi-mediated silencing of endogenous *VInv* gene confers stable reduction of cold-induced sweetening in potato (*Solanum tuberosum* L. cv. Désirée). *Plant Biotechnology Reports*, 1-11. **IF**=**1.5**
6. Fatma S, **Hameed A**, Noman M, Ahmad T, Sohail N, Shahid M, Tariq M & Tabassum R (**2018**). Lignocellulosic biomass: a sustainable bioenergy source for future. *Protein & Peptide Letters 25*:1-16 **IF=1.03**.
7. Ahmed T, Shahid M, Azeem F, Rasul I, Shah AA, Noman M, **Hameed A**, Manzoor N, Manzoor I & Muhammad S (**2018**). Biodegradation of plastics: A way forward to save environment. *Environmental Science and Pollution Research* 1-12 **IF**=**2.8**

8. **Hameed A**, Fatma S, Noman M, Ahmed T & Wattoo JI (**2018**). A computational approach to execute siRNA generating hotspots targeting dual DNA and RNA viral infections in potato. *Asian Journal of Agriculture and Biotechnology*, 6(1): 1-11.
9. **Hameed A,** Fatima S, Watto JI, Yaseen M and Ahmed S (**2018**). Accumulative effects of humic acid and multinutrient foliar fertilizer on the vegetative and reproductive attributes of citrus (*Citrus reticulata* cv. kinnow mandarin). Journal of Plant Nutrition. (Accepted) **IF=0.6**
10. **Hameed A**., Tahir MN, Asad S, Bilal R, Van EJ, Jander G & Mansoor S (**2017**). RNAi-mediated simultaneous resistance against three RNA viruses in potato. *Molecular Biotechnology*, 59:73-83. **IF=1.8**
11. **Hameed A**, Tahir MN, Amin I & Mansoor S (**2017**). First report of *Tomato leaf curl New Delhi virus* and a Tomato yellow leaf curl Thailand betasatellite causing severe leaf curl disease of potato in Pakistan. *Plant Disease*, 101:1065-1065. **IF=3.6**
12. Tahir MN, **Hameed A**, Amin I & Mansoor S (**2017**) Characterization of a begomovirus-betasatellite complex, producing sub-genomic molecules in spinach (*Spinacia oleracea* L.), a new host for begomovirus and betasatellite complex in Pakistan. *Plant Pathology Journal*. 33(5), 514. **IF=1.41**
13. **Hameed A**, Iqbal Z, Asad S & Mansoor S (**2014**). Detection of multiple potato viruses in the field suggests synergistic interactions among potato viruses in Pakistan. *Plant Pathology Journal*, 30:1-9. **IF=1.41**
14. Tariq M, Noman M, Ahmed T, **Hameed A**, Manzoor N, & Zafar M (**2017**). Antagonistic features displayed by plant growth promoting rhizobacteria (PGPR): A Review. Journal of *Plant Science and Phytopathology*, 1:38-43.
15. Wattoo JI, Saleem MZ, Shahzad MS, Arif A, **Hameed A** & Saleem MA (**2016**). DNA Barcoding: Amplification and sequence analysis of *rbcl* and *matK* genome regions in three divergent plant species. *Advancement in Life Sciences*, 4:03-07.

Under Review

- **Hameed A**, Awais M, Ali M, & Tahir MN (**2019**). CRISPR toolbox for metabolic engineering in plants (Applied Biotechnology and Biochemistry).

Books/Book Chapters

1. **Hammed A** & Zaidi SSA (**2019**). Evolutionary factors in the geminivirus emergence: in Geminiviruses-Impact, challenges, and approaches, Springer-Switzerland https://doi.org/10.1007/978-3-030-18248-9_7s.
2. Sattar MN, Iqbal Z & **Hameed A** (**2019**). Replication of DNA satellites and their role in viral pathogenesis: in Geminiviruses-Impact, challenges and approaches Springer-Switzerland. https://doi.org/10.1007/978-3-030-18248-9_9
3. **Hameed A** & Ahmad S (**2012**). "Nutritional supplements for better quality citrus". LAP LAMBERT Academic Publishing: 1-105.

Academic References

Shahid Mansoor, Professor, Director, National Institute for Biotechnology and Genetic Engineering, Faisalabad, Pakistan.
Ph. +92-3007944841 Email: shahidmansoor7@gmail.com

Georg Jander, Professor, Boyce Thompson Instit Plant Research, Cornell University, USA
Ph. +1-607-254-1365 Email: gj32@cornell.edu

Joyce van Eck, Professor, Boyce Thompson Instit Plant Research, Cornell University, USA
Ph. +1-607-254-1686 Email: jv27@cornell.edu

Syed Shan-e-Ali Zaidi, Postdoc: Plant genet. lab, University of Liège, Gembloux, Belgium
Ph. +32-488-364-537 Email: shan.e.ali@outlook.com

Zafar Iqbal, Postdoc: Dept. of Plant Pathology, University of Florida, USA
Ph. +1-352-870-5421 Email: zafar.iqbal@ufl.edu