

Curriculum Vitae



Name : Javed Musarrat

Nationality : Indian

Substantive Position : **Professor of Ag. Microbiology**
Department of Ag. Microbiology
Faculty of Agricultural Sciences
Aligarh Muslim University
Aligarh 202002, India

Current Position : **Vice-Chancellor**
Baba Ghulam Shah Badshah University
Rajouri
J & K

Education:

1987 - Ph.D. in Biochemistry, **Aligarh Muslim University**, Aligarh, India
1984 - M.Phil. in Biochemistry, **Aligarh Muslim University**, Aligarh, India
1982- M.Sc. (Biochemistry), **Div. Ist, Aligarh Muslim University**, Aligarh, India
1980- B.Sc. (Chemistry), **Div. Ist, Aligarh Muslim University**, Aligarh, India
1978- Pre-Medical course, **Div. Ist, Aligarh Muslim University**, Aligarh, India

Academic Positions and Experience:

12/2003 – till date **Full Professor** of Microbiology, Faculty of Ag. Sciences, AMU, Aligarh

06/2016 – 06/2018 **International Professor**, International Scientific Partnership Program (ISPP) at King Saud University, Riyadh, Kingdom of Saudi Arabia.

09/2017 – 09/2018 **Distinguished Adjunct Professor**, Department of Biological Sciences, Faculty of Sciences, King Abdulaziz University, Jeddah, Saudi Arabia

08/2014 – 10/2015 **Dean**, Faculty of Agricultural Sciences, AMU, Aligarh.

08/2014 – 10/2015 **Chairman**, Department of Agricultural Microbiology, Faculty of Agricultural Sciences, AMU, Aligarh.

08/2008 – 11/2012 **Chair Professor**, DNA Research Chair, King Saud University, Riyadh, SA

08/2006 – 08/2008 **Dean**, Faculty of Agricultural Sciences, AMU, Aligarh

07/2001– 10/2008 **Chairman**, Department of Ag. Microbiology, Faculty of Agricultural Sciences, AMU, Aligarh.

06/2000 - 07/2001 **Visiting Scientist**, **Michigan State University**, **E. Lansing, Michigan, USA.**

03/1997 - 06/2000 **Reader in Microbiology**, Aligarh Muslim University, Aligarh, India.

07/1996 - 03/1997	Senior Lecturer in Microbiology , Interdisciplinary Biotechnology Unit, Aligarh Muslim University, Aligarh, India.
02/1993 - 06/1996	Visiting Assistant Professor, The Ohio State University, Columbus OH, USA.
07/1989 - 01/1993	Lecturer in Microbiology , Interdisciplinary Biotechnology Unit, Aligarh Muslim University, Aligarh, India.
12/1988 - 07/1989	Lecturer in Biochemistry , Department of Biochemistry, Faculty of Life sciences, Aligarh Muslim University, Aligarh, India.
09/1988- 12/1988	Visiting Scientist, National Institute of Public Health and Environmental Protection (RIVM) Bilthoven, The Netherlands.
05/1987 - 09/1988	Research Associate , Department of Biochemistry, Aligarh Muslim University, Aligarh, India.
05/1985 - 04/1987	CSIR Senior Research Fellow , Department of Biochemistry, Aligarh Muslim University, Aligarh, India.
05/1983 - 04/1985	CSIR Research Fellow , Department of Biochemistry, Aligarh Muslim University, Aligarh, India.

Statutory/Administrative Positions:

1. **Vice-Chancellor**, Baba Ghulam Shah Badshah University, Rajouri (10/2015 – till date)
2. **Dean**, Faculty of Agricultural Sciences, AMU, Aligarh (08/2014 – 11/2015)
3. **Dean**, Faculty of Agricultural Sciences, AMU, Aligarh (08/2006 – 08/2008)
4. **Chair Professor**, DNA Research Chair, King Saud University, Riyadh, SA (08/2008 – 11/2012).
5. **Registrar**, Aligarh Muslim University, Aligarh (April 29, 2007 – June 16, 2007)
6. **Chairman**, Department of Agricultural Microbiology, Faculty of Agricultural Sciences, AMU, Aligarh. (08/2014 – 10/2015).
7. **Chairman**, Department of Agricultural Microbiology, Faculty of Agricultural Sciences, AMU, Aligarh. (07/2001 – 10/2008)
8. **Officer on Special duty (Development)**, Aligarh Muslim University, Aligarh (07/2007 – 10/2008).
9. **Member-in-Charge (CEO)**, Dawakhana Tibbiya College, AMU, Aligarh (04/ 2002 – 10/2008).

Member of the Councils/Board of Governors/Studies of Academic Institutions/Nodal officer of other Agencies/Organizations

1. **Chairman**, Board of Governors, TEQIP-III (SoET-BGSBU), MHRD-World Bank Project, Gov. of India (2017 –till date)
2. **Chairman**, Executive Council, BGSB University, J & K (October, 2015 – till date)
3. **Chairman**, Academic Council, BGSB University, J & K (October, 2015 – till date)
4. **Member**, Executive Council, IUST, Awantipura, J & K (October, 2015 – till date)
5. **Member**, Academic Council, Central University Jammu J & K (March, 2019 – till date)
6. **Member**, Planning and Monitoring Board, Central University of Kashmir (March 2017 till date).

7. **Member**, Executive Council, AMU, Aligarh (July, 2007 – August 2008)
8. **Member**, Academic Council, AMU, Aligarh (August, 2014 – October 2015)
9. **Member**, Academic Council, AMU, Aligarh (July, 2001- October 2008)
10. **Member**, AMU-Court, AMU, Aligarh (August, 2014 – October 2015).
11. **Member**, AMU-Court, AMU, Aligarh (June, 2003 – October 2008).
12. **Member**, Finance Committee, AMU, Aligarh (July 2007- October 2008)
13. **Member**, Central Library Committee, AMU, Aligarh (April, 2006 – October 2008).
14. **Member**, Central Library Committee, AMU, Aligarh (2014 – October 2015).
15. **Member**, Establishment–cum-Grievance Committee, AMU, Aligarh
16. **Member**, Regional Advisory Committee of Regional Directorate, Central Board for Workers Education, Ministry of Labour & Employment, Govt. of India (September, 2005 – October, 2008).
17. **Member**, Board of studies, Department of Biosciences, Jamia Millia Islamia, New Delhi (2014 – till date).
18. **Member**, Board of Management, Interdisciplinary Biotechnology Unit, AMU, Aligarh (2006 – October 2008).
19. **Member**, Committee for the Assessment and Accreditation of AMU by National Assessment and Accreditation Council (NAAC) (November, 2005 – October 2008).
20. **Member**, Board of Studies of the Department of Applied Chemistry, Z.H. College of Engineering and Technology, AMU, Aligarh (January, 2004 – October 2008)
21. **Member**, Board of Studies of the Department of Saidla, Faculty of Unani Medicine, AMU, Aligarh. (October, 2013 – till date).
22. **Member**, Board of Studies, Centre for Professional Courses, AMU, Aligarh (2004 – October 2008)
23. **Member**, Board of Studies of the Department of Microbiology, Faculty of Medicine, JNMC AMU, Aligarh. (January, 2004 – January, 2006).
24. **Member**, Committee for Staff Appointment on Compassionate Ground, AMU (October, 2003- 2007).
25. **Nodal Officer**, National Information System on Agricultural Education Network (NISAGENET), Indian Agricultural Statistics Research Institute (IASRI), ICAR, New Delhi (September, 2014 – 10/2015).
26. **Nodal Officer**, National Information System on Agricultural Education Network (NISAGENET), Indian Agricultural Statistics Research Institute (IASRI), ICAR, New Delhi (September, 2005 – 2008).
27. **Nodal Officer**, National Academy of Agricultural Research and Management (NAARM), Hyderabad, India (September, 2005 – 2007).
28. **Nodal Officer**, Agricultural Science and Technology Indicators (ASTI), National Centre for Agricultural Economics and Policy Research, ICAR, New Delhi (September, 2005 – 2008).

Membership of Scientific Societies/Awards

- 1 **Life Member**, Environmental Mutagen Society of India.
- 2 **Life Member**, The Association of Microbiologists, India.
- 3 **Life member**, Saudi Biological Society, Riyadh, Saudi Arabia
- 4 **Life Member**, Bio-Ved Research and Communication Centre, Allahabad, India.

- 5 **Life Member**, Ibn-Sina Academy of Medical Sciences, India
- 6 **Ex-President**, The Association of Microbiologists (AMU Chapter), India
- 7 **Member**, The American Society for Microbiologists, USA
- 8 **Member**, The Society of Biological Chemists, India..
- 9 **Member**, The Indian Science Congress Association, India

Member Editorial Boards of Scientific Journals

1. **Member, Advisory Board of the “Toxicology International”** an official Journal of the Society of Toxicology, India.
2. **Member, Editorial Board, International J. of Applied Nanotechnology**, JournalsPub, India
3. **Member, Editorial Board, International Journal of Nanobiotechnology**, JournalsPub, India
4. **Member, Editorial Board, International Journal of Nanosensors**, JournalsPub, India

Total Teaching Experience: 30 years

Total Research Experience: 35 years

Reviewer of Journals

Served in the past and/or serving as a reviewer of several scientific journals (only selected journals are listed as):

The Journal of Toxicological Sciences, Toxicology International, Current Microbiology, Current Science, FEBS Letters, Journal of Photochemistry and Photobiology, Journal of Toxicology and Environmental Health, Mutagenesis, Material letters, Photochemistry and Photobiology, African J. Biotechnology, Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy, Chemosphere, and many more.

Organizer of Conferences/Workshops

1. **Organizing Secretary of the International Symposium on “The Predictive, Preventive Mutagenesis & XXXIII EMSI Annual Meeting**, Department of Agricultural Microbiology, Faculty of Agricultural Sciences, AMU, Aligarh, January 1-3, 2008. Sponsored by DBT, ICMR and CSIR, Govt. of India.
2. **Organizing Secretary of the National One-Day workshop on Flow Cytometry and its applications** Department of Agricultural Microbiology, Faculty of Agricultural Sciences, AMU, Aligarh, January 1-3, 2008. Sponsored by Becton and Dickinson, USA.

3. **Member**, Organizing Committee of the First workshop on **DNA Research: A gateway to Knowledge Economy**, Organized on May 24, 2009, Sponsored by the DNA Research Chair, King Saud University, Riyadh, SA.
4. **Member**, Organizing Committee of the Training Course on “**Polymerase Chain reaction Techniques**” Organized on January 10-12, 2009, Sponsored by the DNA Research Chair, King Saud University, Riyadh, SA.
5. **Member**, Local Organizing Committee, “Summer University”, Sponsored by NRI AMU Alumni, held at the **Department of Agricultural Microbiology, Faculty of Agricultural Sciences, AMU, Aligarh, April 2000 – 2004**, as a regular annual feature.
6. **Member**, Organizing Committee of the workshop on “**Introduction to the use of personal computers and window based software’s in bioinformatics with special reference to NICNET connectivity and CD-ROM databases**” Sponsored by the Department of Biotechnology , Govt. of India.

International Assignments as Visiting Professor/ Research Fellow

- **International Professor**, International Scientific Partnership Program (ISPP) at King Saud University, Riyadh, Kingdom of Saudi Arabia.(2017-2018)
- **Distinguished Adjunct Professor**, Department of Biological Sciences, Faculty of Sciences, King Abdulaziz University, Jeddah, Saudi Arabia (2018)
- **Visiting Professor**, DNA Research Chair, King Saud University, Riyadh, SA (2016)
- **Chair Professor, DNA Research Chair, King Saud University, Riyadh, SA.** (2008-2012)
- **Visiting Scientist**, The Lab of Ecotoxicology and Environmental Health, School of the Environment, Nanjing University (Xianlin Campus), 163 Xianlin Avenue, **Nanjing, Jiangsu, China** (Dec 11-17, 2011)
- **Visiting Scientist, Michigan State University, E. Lansing, Michigan,USA.** (2000-2001)
- **Visiting Assistant Professor, The Ohio State University, Columbus OH, USA.** (02/1993-06/1996)
- **Visiting Scientist, National Institute of Public Health and Environmental Protection (RIVM) Bilthoven, The Netherlands.** (09/1988-12/1988)

International Visits as Invited Speaker:

- **Invited Speaker**, Nano Safety Research Group at Nanotechnology Center (KAU), Faculty of Science, Dept. Biological Sciences, **King Abdulaziz University, Jeddah, Saudi Arabia** (April 11, 2018).

- **Invited Speaker**, ICSB, National Center for Natural Products Research, **University of Mississippi, Oxford, MS, USA** (April 03, 2017).
- **Invited Speaker**: Chair for DNA Research, College of Science, **King Saud University, Riyadh, SA.** (May, 2015,)
- **Invited Speaker**: Chair for DNA Research, College of Science, **King Saud University, Riyadh, SA.** (April 2014)
- **Invited Speaker**: BIT's 3rd Annual World Congress of NanoSciences & Technology-2013, during, **Xian, China** (September 26-28, 2013)
- **Invited Speaker**: 12th Annual Oxford International Conference on the Science of Botanicals (ICBS)" during at **Oxford, Mississippi, USA** (April 15-19, 2013)
- **Invited Speaker**: 11th Annual Oxford International Conference on the Science of Botanicals (ICBS)" during at **Oxford, Mississippi, USA.** (April 16-19, 2012)
- **Invited Speaker**: Nanjing University (Xianlin Campus), 163 Xianlin Avenue, **Nanjing, Jiangsu, China** (Dec 11-17, 2011)
- **Invited Speaker**: "The 2010 IEEE International Conference on Bioinformatics and Biomedical Technology (ICBBT 2010)" during at **Chengdu, Sichuan, China.** (April 16-18,2010)
- **Invited Speaker**: International Conference on Nanotechnology (ICON008), King Abdulaziz University, **Jeddah, SA.** (2008)
- **Invited Speaker**: In Vitro Biology Meeting, **Baltimore, Maryland, USA.** 2005-
- **Speaker**: American Association for Microbiologists, **Orlando, Florida, USA** (2001)-
- **Speaker**: HSRC Research symposium, **Asilomer, Pacific Grove, California, USA** (2000)
- **Invited Speaker**: American Association for Cancer Research, **Washington DC, USA.** (1996)
- **Invited Speaker**: American Association for Cancer Research, **Toronto, Canada.** (1995)
- **Speaker**: Ohio Valley-Lake Erie Association of Cancer Centres (OLACC) and Michigan State University Cancer-Treatment Consortium Conference, **East Lansing, Michigan, USA** (1993)

Total Publications/Books/Book Chapters/Patents/GenBank DNA sequences

1. Total Publications/ Research Articles in JCR-SCI-indexed journals : **(190)**
2. Total Books (*Springer and NOVA, USA Publishers*): **Six (06)**
3. Total Book Chapter: **Twenty (20)**
4. US Patent: One (*US Patent number: 9216455*)
5. NCBI-**GenBank Database**:- Total number of partial DNA sequences deposited **(197)**: Partial gene sequences from different species of Plants (06); Fungi (18); Bacteria (142), Viruses (31).

Total Publications/Citations and *h*-Index.

S. No.	Scientific Citation Indexing Service	Publications Cited	Citations	<i>h</i> - Index
1	Web of Science	147	3351	29
2	Scopus	180	4486	34
3	Google Scholar	190	6118	41 (<i>i10-index: 117</i>)
4	RG Score (41.35)	217	4846	35

ORCID: <http://orcid.org/0000-0001-5981-3813>

Researcher ID : I-1942-2013; Scopus ID : 7004600448

Number of Extra-Mural Research Projects.

As Principal Investigator (AMU, Aligarh) : **Nine (09) Research Projects**

As Co-Principal Investigator (KSU, Riyadh, SA) : **Four (04) Research projects**

Research Grants Successfully Completed as PI/Co-PI

1. **Principal Investigator** of the research project entitled “Molecular and Biochemical Characterization of Rhizospheric Bacteria for development of super bioinoculants with collateral biocontrol and bioremediation Potential. Funded by the **Department of Biotechnology**, Govt. of India vide *Sanction No. BT/PR3488/AGR/05/181/2002*.
2. **Principal Investigator** of the research project entitled “**Assessment of Anti-biosis and Biofilm Inhibition Potential of Metal Oxide Nanoparticles for the developing on Novel Nano-antibiotics**” Funded by the Council of Science and Technology, Vigyan Bhawan, Lucknow-2202446. Sanction No. CST/372 dated 20/25 May, 2015-2018.
3. **Principal Investigator** of the research project entitled “Characterization of Rhizosphere-competent bacteria with intrinsic bioremediation potential for developing bioinoculants specific to Aligarh region “ Funded by the **Council of Science and Technology** (UP), India vide *sanction No. CST/D-2456(11)*.
4. **Principal Investigator** of the research project entitled “Assessment of genotoxic potential of coal fly ash and its promutagenic constituents, Funded by the **Council of Scientific and Industrial Research (CSIR), Government of India** vide *sanction No.37(1124)/03/EMR-11* .
5. **Principal Investigator** of the research project entitled “Microbial Degradation of Polycyclic Aromatic Hydrocarbons in Soil and Subsurface Environment in Vicinity of Mathura Oil Refinery”. Funded by the **Department of Environment, Ministry of Forest and Environment**, Govt. of India, vide *grant No. 19/129/89-RE*.

6. **Principal Investigator** of the research Project entitled “Studies on the binding and photo-induced degradation of biological macromolecules with tetracyclines”. Funded by the A.M.U. Aligarh, India, vide *sanction No. Acad/D-882/w.*
7. **Principal Investigator** of the research Project entitled “Influence of Agrichemicals on Lectin Mediated *Rhizobium*-Legume Symbiosis and Grain Yield in Leguminous Crop”. Funded by the **Council of Science and Technology** (UP), India vide *grant No. CST/AAS/D-1902.*
8. **Principal Investigator** of the research project entitled “Assessment of Unani medicines for toxic heavy metals and their protective role in environmental genotoxicity and mutagenesis. Funded by the Department of AYUSH, CCRUM, Ministry of Health and Family Welfare.
9. **Principal Investigator** of the research project entitled “Studies on agrichemical Induced Structural Modifications and Oxidative Damage in Biological macromolecules”. Funded by **Council for Academic and Research affairs**, India vide *sanction No. MAAS/RS/YKZ/1/D-569.*
10. **Co-Principal Investigator** of the research project entitled “Effects of polybrominated flame retardants from electronic waste on the cellular DNA and carcinogenesis. Funded by the National Plan for Science and Technology, KACST/KSU, Riyadh, SA vide *Sanction No. 10-ENV1314-02.*(April 2012-2014).
11. **Co-Principal Investigator** of the research project entitled “**Assessment of DNA damage and Toxicological Potential of nanoparticles.** Funded by the National Plan for Science and Technology, KACST/KSU, Riyadh, SA vide *Sanction No. 10-NAN1115-02.*(December, 2011- 2013).
12. **Co-Principal Investigator** of the research project entitled “ Bioprospection of Arabian Medicinal Plants as Antiglycation Agents for the Development of a Novel Molecular Therapeutic Approach for Diabetes”. Funded by the National Plan for Science and Technology, KACST/KSU, Riyadh, SA vide *Sanction No. 12-MED2491-02.*(2013-2015).
13. **Co-Principal Investigator** of the research project entitled “ Development of Nanobiosensors for Rapid Detection and Diagnosis of Brucellosis” Funded by the National Plan for Science and Technology, KACST/KSU, Riyadh, SA vide *Sanction No. 12-NAN2490-02.*(2013-2015).

Research guidance/Thesis supervised.

1. Ph.D guidance : **Eight (08)**
2. M.Phil. guidance : **Four (04)**
3. Post-graduate Research Guided/supervised: **Thirty Four(34)**

Awards Received

1. Elsevier **Highly Cited Author Award 2006-20011**, for paper entitled “Significance of *Bacillus subtilis* strain SJ-101 as a bioinoculant for concurrent plant growth promotion and nickel accumulation in *Brassica juncea*. *Chemosphere, Elsevier Ltd, USA.* 64: 991-997.

2. Shared the **First Prize Award** of SR 10,000 for the “**Best Research in the Hub**” in the area of nanotechnology at the “25th Annual Meeting of Saudi Biological Sciences Title: Nanotechnology in Life Sciences” on the work entitled “Biogenic synthesis of silver nanoparticles using an endophytic fungus *Amylomyces rouxii* strain KSU-09” during May 11-13, 2010 at King Faisal University, Al-Ahsa, Saudi Arabia.
3. Shared the **Research Excellence Award** of SR 100,000 for outstanding performance of the Al-Jeraisy Chair for DNA Research for the year 2011, King Saud University, Saudi Arabia.
4. NIH/NCI (USA) Faculty Development Award (1993)

Details of US Patent:

1. US Patent number: 9216455

Patent Pub No.: US2011/0274736 A1

Title: **METHODS FOR PRODUCING SILVER NANOPARTICLES**

Inventors: Abdulaziz A. Alkhedhairi and **Javed Musarrat**, KSU, Riyadh, SA

Pub Date: Nov 10, 2011

Abstract: Methods for producing silver nanoparticles are described. In one aspect, a liquid solution is prepared that contains phenazine-1-carboxylic acid. Silver metal salt is added to the solution to produce multiple silver nanoparticles.

Type: Grant

Filed: May 10, 2010

Date of Patent: December 22, 2015

Books Published

1. Zaidi, A., Khan, M.S., **Musarrat, J.** (2017) *Microbes for Legume Improvement - 2nd Edition* (Eds) M.S. Khan, A. Zaidi, J. Musarrat, **Springer International Publishing AG, Gewerbestrasse 11, 6330 Cham, Switzerland [ISBN 978-33-195-917-35].**
2. Khan, M.S., Zaidi, A., **Musarrat, J.** (2014) *Phosphate Solubilizing Microorganisms-Principle and Applications of Microphos Technology*, (Eds) M.S.Khan, A. Zaidi, J. Musarrat, **Springer International Publishing, Switzerland. [ISBN978-33-190-821-58]**
3. Khan, M.S., Zaidi, A., Goel, R., **Musarrat, J.** (2011) *Biomangement of Metal Contaminated Soils* (Eds) M.S. Khan, A. Zaidi, R. Goel, J. Musarrat, **Springer Science + Business Media B.V., Dordrecht, The Netherlands [ISBN 978-94-007-1913-2]**
4. Khan, M.S., Zaidi, A., **Musarrat, J.** (2010) *Microbes for Legume Improvement* (Eds) M.S. Khan, A. Zaidi, J. Musarrat, **Springer-Verlag GmbH, Berlin/Heidelberg, Germany.[ISBN 978-3-211-99752-9].**

5. Khan, M.S., Zaidi, A., **Musarrat, J.** (2009) Microbial Strategies for Crop Improvement, (Eds) M.S.Khan, A. Zaidi, J. Musarrat, **Springer-Verlag GmbH, Berlin/Heidelberg, Germany. [ISBN 978-3-642-01978-4].**
6. Khan, M.S., Zaidi, A., **Musarrat, J** (2008) Microbes in Sustainable Agriculture, **Nova Science Publishers, Hauppauge, NY, USA [ISBN: 9781604569292].**

Book Chapters Published

1. Ahmed, B., Khan, M.S., Saquib, Q., Al-Shaeri, M., **Musarrat, J.** (2018) Interplay Between Engineered Nanomaterials (ENMs) and Edible Plants: A Current Perspective In: Phytotoxicity of Nanoparticles, (Eds.) Faisal, M., Saquib, Q., Alatar, A.A., Al-Khedhairi, A.A. pp 63-102, Springer International Publishing AG,. **DOI: 10.1007/978-3-319-76708-6_2. [ISBN 978-3-319-76708-6]**
2. Dwivedi S., Saquib Q., Ahmad B., Ansari S.M., Azam A., **Musarrat J.** (2018) Toxicogenomics: A New Paradigm for Nanotoxicity Evaluation. In: Saquib Q., Faisal M., Al-Khedhairi A., Alatar A. (eds) Cellular and Molecular Toxicology of Nanoparticles. **Advances in Experimental Medicine and Biology**, vol 1048. **Springer, Cham. DOI https://doi.org/10.1007/978-3-319-72041-8_9. Print ISBN: 978-3-319-72040-1.**
3. Saquib, Q. Siddiqui, M.A., Ahmad, J., Ansari, S.M., Faisal, M., Wahab, R., Alatar, A.A., Al-Khedhairi, A. A., **Musarrat, J.** (2018) Nickel Oxide Nanoparticles Induced Transcriptomic Alterations in HEPG2 Cells. In: Saquib Q., Faisal M., Al-Khedhairi A., Alatar A. (eds) Cellular and Molecular Toxicology of Nanoparticles. **Advances in Experimental Medicine and Biology**, vol 1048. **Springer, Cham. DOI https://doi.org/10.1007/978-3-319-72041-8_10. Print ISBN: 978-3-319-72040-1.**
4. **Musarrat, J.** and Khan, M.S.. (2017) Factors Affecting Phosphate-Solubilizing Activity of Microbes: Current Status. In : Phosphate Solubilizing Microorganisms: Principles and Application of Microphos Technology, pg. 63-85 (Eds) M. S. Khan, A. Zaidi, J. Musarrat, **Springer International Publishing, Switzerland. [ISBN978-33-190-821-58]**
5. Sourabh Dwivedi, Quaiser Saquib, Abdulaziz A. Al-Khedhairi, and **Javed Musarrat** (2016) Understanding the Role of Nanomaterials in Agriculture. In: Microbial Inoculants in Sustainable Agricultural Productivity Vol. 2: Functional Applications (Eds) D. P. Singh, H. B. Singh and Ratna Prabha". **Springer New Delhi Heidelberg New York Dordrecht London. ISBN 978-81-322-2642-0 ISBN 978-81-322-2644-4 (eBook); DOI 10.1007/978-81-322-2644-4**

6. **Javed Musarrat** and Mohammed Saghir Khan (2014) Factors affecting phosphate solubilizing activity of microbes: A current status, In : Phosphate Solubilizing Microorganisms - Principles and Application of Microphos Technology (Eds) Mohammad Saghir Khan, Almas Zaidi, Javed Musarrat, *DOI 10.1007/978-3-319-08216-5_3*, © *Springer International Publishing Switzerland. ISBN 978-3-319-08216-5*
7. Rizwan Wahab, Farheen Khan, Nagenda K.Kaushik, **Javed Musarrat** and Abdulaziz A.Al-Khedhairi (2014) Construction of Nanostructures: A Basic concept synthesis and their applications” In: Advanced Sensor and Detection Materials (Eds) Ashutosh Tiwari, , Chapter No.2, Page Nos.19-56, *Wiley-Scrivener Publishing, USA. ISBN: 978-1-118-77348-2.*
8. Farheen Khan, Rizwan Wahab, Mohd. Rashid, Mohd. Asif, Asma Khatoon, **Javed Musarrat** and Abdulaziz A.Al-Khedhairi (2014) The Use of Carbonaceous Nanomembrane Filter for Organic Waste Removal, In: "Applications of Nanotechnology in Water Research", (Eds.) Ajay Kumar Mishra, Chapter No. 6, Page Nos. 117-152, *Wiley-Scrivener Publishing, USA. ISBN: 978-1-118-49630-5.*
9. Rizwan Wahab, Farheen Khan, **Javed Musarrat**, and Abdulaziz A.Al-Khedhairi (2013) *Role of Smart Nanostructured Materials in Cancers*; In: Responsive Materials and Methods: State-of-the-Art Stimuli-Responsive Materials and Their Applications" Chapter No. 9, Page Nos. 237-272. (Eds) Ashutosh Tiwari and Hisatoshi Kobayashi, *John Wiley & Sons, Inc., USA, [ISBN: 978-1-118-68622-5].*
10. Rizwan Wahab, I.H. Hwang, Hyung-Shik Shin, Young-Soon Kim, **Javed Musarrat**, Abdulaziz A. Al-Khedhairi and M.A. Siddiqui (2012) *Zinc Oxide Nanostructures and their Applications*; In: Intelligent Nanomaterials: Processes, Properties, and Applications (Eds) Ashutosh Tiwari, Ajay K. Mishra, Hisatoshi Kobayashi and Anthony P.F. Turner, *Scrivener Publishing, Salem, MA, USA., [ISBN: 9780470938799]*
11. **Javed Musarrat**, Almas Zaidi, Mohammad Saghir Khan, Maqsood Ahmad Siddiqui, Abdulaziz A. Al-Khedhairi (2011) Book chapter: *Genotoxicity Assessment of Heavy Metal contaminated soils*, In: Biomangement of Metal Contaminated Soils (Eds) M.S. Khan, A. Zaidi, R. Goel, J. Musarrat, *Springer Science + Business Media B.V., Dordrecht, The Netherlands [ISBN 978-94-007-1913-2]*
12. **Javed Musarrat**, Sourabh Dwivedi, Braj Raj Singh, Quaiser Saquib, Abdulaziz A. Al-Khedhairi (2011) *Microbially Synthesized Nanoparticles: Scope and Applications* (Eds) I. Ahmad et al., *Springer-Verlag Berlin Heidelberg, Germany (DOI 10.1007/978-1-4419-7931-5). ISBN 978-1-4419-7930-8 e-ISBN 978-1-4419-7931-5.*

13. **Musarrat, J;** Zaidi, A., Khan, M.S (2010) *Recent Advances in Rhizobium-Legume Interactions: A Proteomic Approach*, In book entitled “ Microbes for Legume Improvement (Eds) M. S. Khan, A. Zaidi, J. Musarrat, **Springer-Verlag GmbH, Berlin/Heidelberg, Germany.**
14. Mohd Sajjad Ahmad Khan, Iqbal Ahmad, Farrukh Aqil, Mohd Owais, Mohd Shahid, and **Javed Musarrat** (2010) *Virulence and Pathogenicity of Fungal Pathogens with Special Reference to Candida albicans*: In book entitled “Combating Fungal Infections” (Eds) Ahmad, I.; Owais, M.; Shahid, M.; Aqil, F. (Eds.), **Springer-Verlag Berlin Heidelberg**. [ISBN: 978-3-642-12172-2].
15. **Musarrat J.**, Al-Khedhairi, A.A., Alarifi, S.A., Khan S.M (2009) Role of 1-*Aminocyclopropane-1-carboxylate deaminase in Rhizobium-legume symbiosis, in Microbial strategies for crop Improvement* (Eds) Khan, M.S., Zaidi, A. and Musarrat, J, Springer-Verlag GmbH, Berlin/Heidelberg, Germany.
16. **Musarrat, J.** and Khan, M.S. (2008) *Role of Quorum Sensing in Rhizobium-legume symbiosis*, In: Microbes in Sustainable Agriculture (Eds) M.S.Khan, A. Zaidi, J. Musarrat, Chapter 5, Nova Science Publishers, Hauppauge, NY, USA.
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