Ajay Kumar Mishra; MSc, MPhil, PhD, CSci, FRSC

Professor: University of the Western Cape, South Africa
Director: Academy of Nanotechnology and Waste Water Innovations, South Africa
Chair: IEEE Nanotechnology Council South Africa Chapter, South Africa
Visiting Professor: Robert Gordon University, UK
Visiting Professor: Bashkir State University, Russia
Adjunct Professor, Jiangsu University, Hebei University of Science and Technology, China
Adjunct Professor: Vaal University of Technology, South Africa
Top 2% most cited scientist globally (2019, 2020, 2021, 2022. 2023, 2024)

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- **Web of Science/ Researcher ID:** http://www.researcherid.com/rid/A-4668-2015
- **Scopus ID:** http://www.scopus.com/authid/detail.url?authorId=55445633100
- **Google Scholar ID:** https://scholar.google.co.za/citations?user=5Um1GE4AAAAJ&hl=en&oi=ao

Professional Career

- July 2024 – To Date: **Professor:** Department of Chemistry, University of the Western Cape, South Africa
- August 2022 – June 2024: **Professor:** Department of Chemistry, Durban University of Technology, South Africa
- February 2021 – To date**: Director:** Academy of Nanotechnology and Waste Water Innovations, Johannesburg, South Africa
- January 2016 – to date**: Chair: IEEE** Nanotechnology Council South Africa Chapter, South Africa
- May, 2013 – Present: **Adjunct Professor*: Nanomaterials****,* Jiangsu University, China.
- January, 2017 – Present: **Visiting Professor*: Nanocomposites and Nanomaterials****, Robert Gordon University*, UK.
- November, 2019 – Present: **Visiting Professor*: Nanomaterials****, Bashkir State University*, UK.
- January 2015 – December 2020: **Professor,** Institute for Nanotechnology and Water Sustainability (iNanoWS), University of South Africa, Florida Campus, South Africa
- November, 2011 – December 2014: **Associate Professor*:*** Department of Applied Chemistry, University of Johannesburg, Doornfontein Campus, Johannesburg, South Africa.
- June, 2012 – March 2013 **: Director*: Centre for Nanomaterials Science***. University of Johannesburg, Doornfontein Campus, Johannesburg, South Africa.
- October, 2009 – October 2011 : ***Senior Lecturer:*** Department of Chemical Technology, University of Johannesburg, Doornfontein Campus, Johannesburg, South Africa.
- February, 2008 – September 2009 : ***Postdoctoral Fellow:*** Department of Chemical Technology, University of Johannesburg, Doornfontein Campus, Johannesburg, South Africa.
- October 2007 – January 2008 : ***Postdoctoral Fellow:*** Built Environment (Civil Engineering). Council of Scientific and Industrial Research (CSIR), Pretoria, South Africa.
- March 2006 – September 2007 : ***Postdoctoral Fellow:*** *Natural and Agricultural Sciences (Chemistry)*. University of the Free State, Qwaqwa Campus, Phuthaditjhaba, Free State, South Africa.
- April 2003 – January 2006 : ***PhD, Bio-inorganic Chemistry***. Department of Chemistry, University of Delhi, Delhi, India.
- July 2001 – October 2002 : ***M.Phil, Bio-inorganic Chemistry***. Department of Chemistry, University of Delhi, Delhi, India.
- July 1999 – June 2001 : ***M.Sc, Inorganic Chemistry***. Department of Chemistry, Udai Pratap (Autonomous) College, Varanasi, India.
- July 1999 – June 2001 : ***P.G.D.M., Environmental Science***. Department of Environmental Science, Udai Pratap (Autonomous) College, Varanasi, India.
- July 1994 – June 1997 : ***B.Sc, Chemistry, Botany***. Department of Chemistry, Udai Pratap (Autonomous) College, Varanasi, India.

Administrative Responsibilities (Selected)

- Faculty Research Rep, University of the Western Cape, South Africa. January 2025-Present
- Member, Senate, University of the Western Cape, South Africa. July 2024-Present
- Member, Faculty Board, Faculty of Natural Sciences, University of the Western Cape, South Africa. July 2024-Present
- Group Leader of "Sustainable Materials Laboratory" at Department of Chemistry, University of the Western Cape, South Africa. July 2024-Present
- Member, Senate (2022-2024), Durban University of Technology, South Africa
- Member, Faculty Research Committee (2022-2024), Durban University of Technology, South Africa
- Member and chair, Departmental Research Committee (2022-2024), Durban University of Technology, South Africa
- Member and chair, Higher degree committee, Durban University of Technology (2022-2024), South Africa
- IEEE Nanotechnology council Chair: (South Africa chapter January 2016-Todate).
- Group leader: Nanocomposite Thematic area (January 2015- December 2020)
- LRS SGB member, March 2019-2022
- IEEE Nanotechnology Council-Vice-Chair: (South Africa chapter January 2015-December 2015).
- Deputy Secretary-general, International Union of Advanced Materials (IUAM), China (2013-Todate).
- Director: Centre for Nanomaterials Science (June 2012-March 2013).
- Research Chair: Department of Applied Chemistry for conducting research activities (2011-2012).
- Research Coordinator: Department of Applied Chemistry for research activities (2013-2014).
- Coordinator for Centre of Excellence and Strong Materials (CoESM-Wits University) for the Department of Applied Chemistry, University of Johannesburg (2014).
- Executive member of Departmental Research Committee (2011-2014).

Professional Scientific Member

1. Fellow Member (481837), Royal Society of Chemistry (FRSC), UK. 2017-Todate
2. Chartered Scientist, Royal Society of Chemistry (CSci), UK. 2018-Todate
3. Fellow Life member, Journal of Environmental Research and Development (JERAD), India. 2014-Todate
4. Member (30175889), American Chemical Society, USA. 2009-Todate
5. Academic advisory board member for Green Nanotechnology Educationist, India. 2012-To date
6. Active advisory member for Neuropathic Pains experts in medical activities. 2011-To date
7. Member, Centre of Excellence and Strong Materials (CoESM) University of Witwatersrand, South Africa. 2009-2014.
8. Member, UJ Centre for Nanomaterials Science, University of Johannesburg, South Africa. 2009-2014.
9. Member, Nanotechnology Innovation Centre (NIC), South Africa. 2009-2014.
10. Member, Advisory Committee, International Union of Advanced Materials. 2013-To date
11. Member, Advisory Committee, Chinese Advanced Materials Society. 2013-To date
12. Member, American Nano Society, USA. 2009-To date
13. Life Member, International Association of Advanced Materials (IAAM), India. 2009-To date
14. Member, South African Chemical Institute (SACI), South Africa. 2008 -To date
15. Member, Indian Carbon Society, India. 2003-2005.
16. Member, IEEE Dielectric and Electrical Insulation Society Chapter in Africa, Morocco. 2013.
17. Member, International Chemical Sciences Chapter of the American Chemical Society in South Africa. 2014-To date

Research Interests

- Synthesis of multifunctional nano-materials, nano-composites, biopolymer and/or petrochemical based biodegradable polymers and polymers-based materials/composites for various applications, special attention to drug delivery.
- Nanotechnology towards to the development of smart materials for various applications in the field of Materials Science/Polymer Science/Water Research/Bio-inorganic Chemistry.
- Organometallic Chemistry/Bio-inorganic Chemistry and Catalysis in the area of Inorganic Chemistry.
- Carbon nanotube and graphene based composite materials for technological applications.

Awards (Selected)

- Finalist for years 2016, 2023, 2024) for NSTF award South Africa
- Best Research award, Department of Chemistry (2022), Durban University of Technology, South Africa
- Chancellor Prize winner, University of South Africa, South Africa, 2019.
- Chartered Scientist at Royal Society of Chemistry (CSci), UK, 2018.
- FRSC (Fellow member at Royal Society of Chemistry), UK, 2017.
- Finalist for NSTF award 2016
- Winner of UNISA's Excellence Research Award-NRF-C-rated researcher, 2016
- Special recognition from "ICE MCMP 2015" at Boston, USA
- Winner of the MAHATMA GANDHI PRAVASI SAMMAN 2014 at House of Lords UK.
- Special recognition at Materials Science conference at San Antonio, USA.
- Winner of the HIND RATAN Award 2014 at New Delhi, India.
- Winner of AML Medal 2011 at New Delhi, India.
- Winner of IAAM Scientist Award at Jianan, China.
- Winner of Acharya Vinova International (AVI) Award 2009 at India.
- Nominated for the UJ's Most Promising Young Researcher Award (UJ) for the year 2010-2011.
- Nominated for NSTF-BHP Billiton Award 2012/13

Honors (Selected)

- Top 2% most cited scientist globally since 2019 to date Based on data from Elsevier's Scopus, the abstract and citation database, the report was prepared by Professor John Ioannidis of Stanford University and his team and published in the journal PLOS Biology
- **B Rated** researcher by National Research Foundation, South Africa.
- Biography selected for prestigious MARQUIS Who's Who in the World 2012 (29th Edition) November 2011.
- Published some papers ranked under category "TOP 25 Hottest Article".
- Panel Member, Chair and Assessor: National Research Foundation (NRF) for funding.
- Panel Member (Promotion) both national and international
- External expert for the assessment of research funding proposal for the National Research Foundation.
- Examiner of a number of National and International Universities for MSc and PhD students.
- External evaluator for the promotion
- Deputy Secretary-general, International Union of Advanced Materials, China.
- Programme Chair and Secretary, International Conference on Nanomaterials & Nanotechnology (ICNANO-2011), 18-21 December 2011, University of Delhi, Delhi, India.
- Secretary, Advanced Materials Congress-2011, 13-16 May, 2011, University of Jinan, Jinan, China

Media Recognition (Selected)

- Media interview by award winning CEO on Power talk "It Takes a lot of Blue to stay Green" Zoom meeting, December 2020.
- Media interview by Russian local media on *"Nanotechnology and waste water remediation"* Ufa, Russia, November 2019.
- FM interview on "Nanotechnology", Johannesburg, South Africa, June 2019.
- **BBC** Radio programme "The Forum" a weekly exploration of knowledge and ideas on the BBC's World Service on ***'Plastic: How it Changed the World'*** 17 April 2018.
- Media interview by Russian local television on *"Nanotechnology application to water research in context to Russia and South Africa"* Ufa, Russia, December 2015.

Other Highlights of CV in Summary (Selected)

- Member editorial board for many international Journals.
- Acted potentially as editor of several peer reviewed international books and journals.
- Member organizing committee for many international conferences.
- Supervisor to the postdocs, PhD & Master student. 13 postdoc, 26 PhD and 23 master researchers. 19 PhD & 22 Master students graduated in which most of the master student secured *cum laude*.
- Published more than 450 research articles/chapters/books and proceeding.
- Delivered more than 150 Plenary/Keynote/Guest and Invited lectures beside attending and delivering expert talk in national/international conferences.
- Secure several multimillions national and international research grants.
- Established a number of collaborations national and international.
- Member of promotion committee for internal and external promotion of candidate for their Associate and full Professor Position.
- Hosted number of conferences and workshop.
- Hosted number of researchers across the world in the "Nanocomposite Research Group".
- Active researchers in the group visited various international laboratory worldwide.

Authored and Edited books (last 6 years)

1. "Smart Ceramics: Preparation, Properties and Applications", Editor, **Ajay Kumar Mishra**, Pan Stanford Publisher, Singapore, 2018. ISBN: 978-981-4774-30-7.
2. "Ruthenium Chemistry", Editors, **Ajay Kumar Mishra**, Lallan Mishra, Pan Stanford Publisher, Singapore, 2018. ISBN: 978-981-4774-39-0.
3. "Bio & Nanosorbents from Natural Resources", Editors, Shivani Bhardwaj Mishra and **Ajay Kumar Mishra**, Springer Publisher, Switzerland, 2018. ISBN: 978-3-319-68707-0.
4. "Nanocomposite for Pollution Control", Editors, Chaudhery Mustansar Hussain and **Ajay Kumar Mishra**, Pan Stanford Publisher, Singapore, 2018. ISBN: 978-981-4774-45-1.
5. "New Polymer Nanocomposite for Environmental Remediation", Editors, Chaudhery Mustansar Hussain and **Ajay Kumar Mishra**, Elsevier Publisher, UK, 2018. ISBN: 978-0-12-811033-1.
6. 3rd Series of Nano & Water "Nanotechnology for Sustainable Water Resources", Editors, Chaudhery Mustansar Hussain and **Ajay Kumar Mishra**, Wiley-Scrivener Publisher, USA, 2018. ISBN: 978-1-119-32359-4.
7. "Nanotechnology in Environmental Science (Vol 1 & 2)", Editors, Chaudhery Mustansar Hussain and **Ajay Kumar Mishra**, John Wiley and Sons, USA, 2018. ISBN: 978-3-527-34294-5.
8. "Graphene Oxide: Advances in Research and Applications", Editors, **Ajay Kumar Mishra** and Deepak Pathania, Nova Publishers, USA 2018. ISBN: 978-1-536-14168-9.
9. "Emerging and nanomaterial contaminants in wastewater: Advanced Treatment Technology" Editors, **Ajay Kumar Mishra**, Hossain Md Anawar, Nadjib Drouiche, Elsevier Publisher, UK, 2019. ISBN: 978-0-12-814673-6.

10. "Green Nanocomposites: Advances and Applications in Environmentally Friendly Carbon Nanomaterials", Editors, **Ajay Kumar Mishra**, Deepak Pathania, Lap Publisher, Latvia, 2019. ISBN: 978-6-20-045627-4.
11. "Emerging Carbon-Based Nanocomposites for Environmental Applications" Editors, **Ajay Kumar Mishra**, Chaudhery Mustansar Hussain and Shivani Bhardwaj Mishra, Wiley-Scrivener Publisher, USA, 2020. ISBN: 978-1-11-955485-1.
12. "Handbook on Smart Photocatalytic Materials: Environment, Energy, Emerging Applications and Sustainability", Editors, Chaudhery Mustansar Hussain and **Ajay Kumar Mishra**, "Elsevier Publisher, USA, 2020. ISBN: 978-0-12-819050-0.
13. "Handbook on Smart Photocatalytic Materials: Fundamentals, Fabrications and Water Resource Applications", Editors, Chaudhery Mustansar Hussain and **Ajay Kumar Mishra**, Elsevier Publisher, USA, 2020. ISBN: 978-0-12-819051-7.
14. "Nanomaterials for Water Remediation-2nd Edition", Editors, **Ajay Kumar Mishra**, Chaudhery Mustansar Hussain and Shivani Bhardwaj Mishra, De Gruyter Publisher, UK, 2020. ISBN: 978-3-11-065060-0.
15. "Bio-based Nanomaterials-Synthesis, protocols, mechanisms and applications", Editors, **Ajay Kumar Mishra**, Chaudhery Mustansar Hussain, Elsevier Publisher, USA, 2022. ISBN: 978-0-32-385148-0.
16. "Eco-friendly Waterborne Polyurethanes: Synthesis, Properties and Applications", Editors, Ram Gupta, **Ajay Kumar Mishra**, CRC Press (Taylor and Francis Group), USA, 2022. ISBN: 978-1-00-053288-3.
17. "Bio-based Materials-Recent Developments and Industrial Applications", Editors, **Ajay Kumar Mishra**, Chaudhery Mustansar Hussain, Springer Publisher, USA, 2023. ISBN: 978-9-81-196023-9.
18. "Nano-engineered Materials for Textile Waste Remediation", Editor, **Ajay Kumar Mishra**, Springer Publisher, USA, 2023. ISBN: 978-9-81-197978-1.
19. "Valorization of Wastes for Sustainable Development: Waste to Wealth", Editors, S Rangabhashiyam, Nur Izyan binti Wan Azelee, RS Saravanan, V Ponnusami, **Ajay Kumar Mishra**, Elsevier Publisher, USA, 2023. ISBN: 978-0-32-395417-4
20. "Advanced Functional Materials and Methods for Photodegradation of Toxic Pollutants", Editors, **Ajay Kumar Mishra**, Pardeep Singh, Pankaj Raizada, Vadivel Sethumathavan, Rangabhashiyam Selvasembian, Elsevier Publisher, USA, 2024. ISBN: 978-0-32-395953-7
21. "Bioplastic for Sustainability: Manufacture, Technologies, and Environment", Editors, **Ajay Kumar Mishra**, Chaudhery Mustansar Hussain, Elsevier Publisher, USA, 2024. ISBN-978-0-32-395199-9
22. "Microplastics - Environmental Pollution and Degradation Process", Editors, **Ajay Kumar Mishra**, Pankaj Raizada, Elsayed T. Helmy, Santhiagu Arockiasamy and Rangabhashiyam Selvasembian, Springer Publisher, USA, 2024. ISBN-978-981-97-6461-7
23. "Green Nanostructured Photocatalysts: Design, Performance and Applications", Editors, **AK Mishra**, CM Hussain & CG Hussain, Wiley-Scrivener Publisher, USA, 2025.
24. "Biosynthesis of Polyhydroxyalkanoates (PHA): Technology, Environment & Sustainability", Editors, **AK Mishra**, CM Hussain & CG Hussain, Wiley-Scrivener Publisher, USA, 2025.

Book chapters (6 years)

[1] "Chitosan-Lignin titania nanocomposite as an adsorbent for dyes and metal ions", T.M. Masilompane, S.B. Mishra and **A.K. Mishra**, "Bio & Nanosorbents from Natural Resources", Editor(s), Ajay Kumar Mishra and Shivani B. Mishra, Chapter 3, pp. 55-73, Springer Publisher, Switzerland, 2018. **ISBN: 978-3-319-68707-0**

[2] "Ceramic based Nanomaterials for Multifunctional Application", Sangeeta Adhikari, **Ajay Kumar Mishra** and Debasish Sarkar, "Smart Ceramics: Preparation, Properties and Applications", Editor, Ajay Kumar Mishra, Chapter 3, pp. 73-120, Pan Stanford Publishers, Singapore, 2018. **ISBN: 978-981-4774-30-7**

[3] "Chemistry behind performance of ceramic membranes and their future in Membrane technology", Derrick S. Dlamini, Nomcebo P. Khumalo, Simphiwe Zwane, **Ajay K. Mishra**, Bhekie B. Mamba, "Smart Ceramics: Preparation, Properties and Applications", Editor, Ajay Kumar Mishra, Chapter 8, pp. 253-274, Pan Stanford Publishers, Singapore, 2018. **ISBN: 978-981-4774-30-7**

[4] "Corrosion resistant nanomaterial systems derived through sol-gel technology", S.C. Mojaki, **A.K. Mishra** and S.B. Mishra, "Smart Ceramics: Preparation, Properties and Applications", Editor, Ajay Kumar Mishra, Chapter 11, pp. 355-380, Pan Stanford Publishers, Singapore, 2018. **ISBN: 978-981-4774-30-7**

[5] "Nanosensors as tools for water resources", Ephraim Vunain, AK Mishra, "Nanotechnology for sustainable water resources", Editor (s), Ajay Kumar Mishra and Chaudhery Mustansar Hussain, Chapter 6, pp. 179-198, Wiley-Scrivener Publisher, USA, 2018. **ISBN: 978-1-119-32359-4**

[6] "Functionally active nanomaterials for environmental remediation", Sangeeta Adhikari, N Krishna Rao Eswar, **Ajay Kumar Mishra** Debasish Sarkar and Giridhar Madras, "Nanotechnology in Environmental Science", Editor, Chaudhery Mustansar Hussain and Ajay Kumar Mishra, Chapter 9, pp. 293-314, Wiley-VCH Publishers, USA, 2018. **ISBN: 978-3-527-34294-5**

[7] "Bioplymers: A natural support for photocatalysts applied tonpollution remediation", Diseko Boikanyo, **Ajay Kumar Mishra**, Shivani B. Mishra, Sabelo D. Mhlanga, "Nanotechnology in Environmental Science", Editor, Chaudhery Mustansar Hussain and Ajay Kumar Mishra, Chapter 20, pp. 649-684, Wiley-VCH Publishers, USA, 2018. **ISBN: 978-3-527-34294-5**

[8] "Carbon supported photocatalysts for organic dye photodegradation", Diseko Boikanyo, **Ajay Kumar Mishra**, Shivani B. Mishra, Sabelo D. Mhlanga, "New Polymer nanocomposites for environmental remediation", Editor, Chaudhery Mustansar Hussain and Ajay Kumar Mishra, Chapter 20, pp. 649-684, Elsevier Publishers, UK, 2018. **ISBN: 978-0-12-811033-1**

[9] "An introduction to ruthenium chemistry", Lallan Mishra and **Ajay Kumar Mishra**, "Ruthenium Chemistry", Editors, **Ajay Kumar Mishra**, Lallan Mishra, Chapter 1, pp. 1-10, Pan Stanford Publisher, Singapore, 2018. **ISBN: 978-981-4774-39-0**.

[10] "Nanocomposites for pollution control", Ephraim Vunain, **Ajay Kumar Mishra** and BB Mamba, "Nanocomposite for Pollution Control", Editors, Chaudhery Mustansar Hussain and **Ajay Kumar Mishra**, Chapter 2, pp. 47-80, Pan Stanford Publisher, Singapore, 2018. **ISBN: 978-981-4774-45-1**

[11] "Green and sustainable future nanocomposites", Vaneet Kumar, Saruchi and **Ajay Kumar Mishra**, "Nanocomposite for Pollution Control", Editors, Chaudhery Mustansar Hussain and **Ajay Kumar Mishra**, Chapter 18, pp. 615-638, Pan Stanford Publisher, Singapore, 2018. **ISBN: 978-981-4774-45-1**

[12] "Concluding notes", Chaudhery Mustansar Hussain and **Ajay Kumar Mishra**, "Nanocomposite for Pollution Control", Editors, Chaudhery Mustansar Hussain and **Ajay Kumar Mishra**, Chapter 19, pp. 639-643, Pan Stanford Publisher, Singapore, 2018. **ISBN: 978-981-4774-45-1**

[13] "General introduction on graphene oxide", **Ajay Kumar Mishra** and Deepak Pathania, "Graphene Oxide: Advances in Research and Applications", Editors, **Ajay Kumar Mishra** and Deepak Pathania, Chapter 1, pp Nova Publishers, USA, 2018. **ISBN: 978-1-53614-168-9**

[14] "Smart Polymer Catalysts and their Applications" KIS Mabape, C Donga, SB Mishra and **AK Mishra**, Smart Polymer Catalysts and Tunable Catalysis, Editors Songjun Li, Peter A. Lieberzeit, Sergey A. Piletsky, and Anthony P.F. Turner, Chapter 4, pp 77-94, Elsevier Publisher, UK, 2019. **ISBN: 978-0-12-811840-5**

[15] "An overview of treatment technologies for the removal of emerging and nanomaterials contaminants from municipal and industrial wastewater" Sangeeta Adhikari, Sandip Mandal, Do-Heyoung Kim and **Ajay Kumar Mishra**, "Emerging and nanomaterial contaminants in wastewater: Advanced Treatment Technologies," Editors, **Ajay Kumar Mishra**, Hossain Md Anawar, Nadjib Drouiche, Chapter 1, pp 3-40, Elsevier Publisher, UK, 2019. **ISBN: 978-0-12-814673-6**

[16] "Polymer-based Engineering Materials for removal of nanowastes from water" C Donga, KIS Mabape, SB Mishra and **AK Mishra**, "Emerging and nanomaterial contaminants in wastewater: Advanced Treatment Technologies," Editors, **Ajay Kumar Mishra**, Hossain Md Anawar, Nadjib Drouiche, Chapter 8, pp 217-243, Elsevier Publisher, UK, 2019. **ISBN: 978-0-12-814673-6**

[17] "Removal of Arsenic and chromium using functional green composites", Sangeeta Adhikari, Sandip Mandal, **Ajay Kumar Mishra**, "Green Nanocomposites: Advances and Applications in Environmentally Friendly Carbon Nanomaterials", Editors, **Ajay Kumar Mishra**, Deepak Pathania, Lap Publisher, Latvia, 2019. **ISBN: 978-6-20-045627-4**

[18] "Functional Green Carbon Nanocomposites for Heavy-Metal Treatment in Water: Advance Removal Techniques and Practices", Sandip Mandal, Sangeeta Adhikari, **Ajay Kumar Mishra** and Do-Heyoung Kim, "Emerging Carbon-Based Nanocomposites for Environmental Applications", Editors, **Ajay Kumar Mishra**, Shivani B. Mishra, Chaudhery Mustansar Hussain, Chapter 2, pp 31-53, Wiley-Scrivener Publisher, USA, 2020. **ISBN: 978-1-11-955485-1**

[19] "Biochar-Based Adsorbents for the Removal of Organic Pollutants from Aqueous Systems", Nhamo Chaukura, Thato M Masilompane, Willis Gwenzi, **Ajay K. Mishra**, Emerging Carbon-Based Nanocomposites for Environmental Applications", Editors, **Ajay Kumar Mishra**, Shivani B. Mishra, Chaudhery Mustansar Hussain, Chapter 6, pp 147-174, Wiley-Scrivener Publisher, USA, 2020. **ISBN: 978-1-11-955485-1**

[20] "Conductive polymer-based nanocomposites for removal of hexavalent chromium and trivalent arsenic from waste water solution", T.N. Moja, SB Mishra and **AK Mishra**, "Natural Polymer based Green Adsorbents for Water Treatment", Editor, Susheel Kalia, Chapter 10, pp. 243-266, Elsevier Publisher, UK, 2021. **ISBN: 978-0-12-820541-9**

[21] "Nanotechnology and Green materials: Introduction, Fundamentals and Applications", N. Madima, SB Mishra and **AK Mishra**, "Green Functionalized Nanomaterials for Environmental Applications", Editors, Uma Shanker, CM Hussain, M Rani, Chapter 1, pp 3-19, Elsevier Publisher, USA, 2022. **ISBN: 978-0-12-823615-4**

[22] "Cellulose-based nanomaterials for textile applications", Bapun Barik, Banalata Maji, Debasish Sarkar, **Ajay Kumar Mishra**, Priyabrat Dash, "Bio-Based Nanomaterials: Synthesis Protocols, Mechanisms and Applications", Editors, **Ajay Kumar Mishra** and Chaudhery Mustansar Hussain, Chapter 1, pp 1-19, Elsevier Publisher, USA, 2022. **ISBN: 978-0-32-385148-0**

[23] "Enhanced dye recovery from textile effluents by means of biobased nanomaterials/polymer loose nanofiltration membranes", Derrick S Dlamini, Gcina D Vilakati, Christine Matindi, **Ajay Kumar Mishra**, Justice M Thwala, Bhekie B Mamba, Jianxin Li, "Bio-Based Nanomaterials: Synthesis Protocols, Mechanisms and Applications", Editors, **Ajay Kumar Mishra** and Chaudhery Mustansar Hussain, Chapter 5, pp 73-91, Elsevier Publisher, USA, 2022. **ISBN: 978-0-32-385148-0**

[24] "Biodegradation and water absorption studies of natural gum rosin-based hydrogel", Rachna Sharma, Rajeev Jindal, Balbir Singh Kaith, Vaneet Kumar, Saruchi, **Ajay Kumar Mishra**, and Shivani Mishra, "Bio-Based Nanomaterials: Synthesis Protocols, Mechanisms and Applications", Editors, **Ajay Kumar Mishra** and Chaudhery Mustansar Hussain, Chapter 6, pp 93-108, Elsevier Publisher, USA, 2022. **ISBN: 978-0-32-385148-0**

[25] "Toxicological effect of biopolymers and their applications", Gagandeep Kaur, Vaneet Kumar, **Ajay Kumar Mishra**, Shivani Mishra, "Bio-Based Nanomaterials: Synthesis Protocols, Mechanisms and Applications", Editors, **Ajay Kumar Mishra** and Chaudhery Mustansar Hussain, Chapter 12, pp 265-284, Elsevier Publisher, USA, 2022. **ISBN: 978-0-32-385148-0**

[26] "Biogenic synthesis of nanoparticles and its application in wastewater treatment", Shreyeshi Dhar, Rangabhashiyam Selvasembian, Rahul Sharma, Pradeep Singh, Chittabrata Mal, **Ajay Kumar Mishra** and Joyabrata Mal, "Biotechnology in Environmental protection", Ediors, Rangabhashiyam Selvasembian, Eric D. van Hullebusch, Joyabrata Mal, Chapter 9, pp, 233-255, Springer Nature Publisher, USA, 2022. **ISBN: 978-9-81-194937-1**.

[27] "Introduction to Textile Waste Remediation", A Tiwari, Shivani B Mishra and **Ajay Kumar Mishra**, "Nano-engineered Materials for Textile Waste Remediation," Editor, Ajay Kumar Mishra, Chapter 1, pp 1-13, Springer Publisher, USA, 2023. **ISBN: 978-9-81-197978-1**.

[28] "MOF: A futuristic material for dyes remediation", P Chauhan and **Ajay Kumar Mishra**, "Nano-engineered Materials for Textile Waste Remediation," Editor, Ajay Kumar Mishra, Chapter 6, pp 129-151, Springer Publisher, USA, 2023. **ISBN: 978-9-81-197978-1**.

[29] "An overview of synthesis techniques for functional photocatalysts", Sheetal Maan, Mamta Bulla, Sanchit Mondal, Raman Devi, Anushree Jatrana, **Ajay Kumar Mishra**, and Vinay Kumar, "Advanced Functional Materials and Methods for Photodegradation of Toxic Pollutants", Editors, **Ajay Kumar Mishra**, Pardeep Singh, Pankaj Raizada, Vadivel Sethumathavan, Rangabhashiyam Selvasembian, Chapter 2, pp 37-61, Elsevier Publisher, USA, 2024. **ISBN: 978-0-32-395953-7**.

[30] "State of-the-art progress of metal–organic frameworks-based photothermal catalysis", Pratibha Chauhan and **Ajay Kumar Mishra**, "Advanced Functional Materials and Methods for Photodegradation of Toxic Pollutants", Editors, **Ajay Kumar Mishra**, Pardeep Singh, Pankaj Raizada, Vadivel Sethumathavan, Rangabhashiyam Selvasembian, Chapter 5, pp 109-127, Elsevier Publisher, USA, 2024. **ISBN: 978-0-32-395953-7**

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