




## Faculty Profile



Title	Prof.	First Name	<b>Mamta</b>	Last Name	<b>Bhatia</b>	Photograph
Designation	<b>Professor</b>					
Address	Physics Department, Acharya Narendra Dev College, University of Delhi, New Delhi-110019  Visiting Scholar, Purdue University, U.S					
Phone No Office	<b>011-26412547</b>					
Residence						
Mobile						
Email/ Web-Page	<b>mamtabhatia@andc.du.ac.in</b>					
Educational Qualifications						
Degree	Institution				Year	
Ph.D	<b>University of Delhi</b>				<b>1992</b>	
M.Phil	<b>University of Delhi</b>				<b>1985</b>	
M.Sc	<b>University of Delhi</b>				<b>1983</b>	
B.Sc(Hons)Physics	<b>University of Delhi, Miranda House</b>				<b>1981</b>	
Career Profile						
<p>Prof. (Dr.) Mamta Bhatia has been the recipient of two Fulbright Awards (2017 &amp; 2014). She also received International Education Excellence award in Physics (2021) awarded by CPACE, Vijaywada, India and Young Scientist award (1987) awarded by ISCA, India. She is Visiting Scholar at Department of Physics and Astronomy, Purdue University, U.S. During a span of 35 years of her professional career at University of Delhi, besides teaching Physics, she has worked extensively towards industry-academia linkages and also served on administrative positions as Head of Institutions. She has been associated with research, writing book chapters, reviewing e-materials, designing online courses, curriculum revision etc. Her teaching and research repertoire is extensive and not limited to Physics. She has presented papers at International Conferences on topics related to Skill development, Community colleges models, Open and distance education linked with Vocational education, Women empowerment, STEM education, entrepreneurship etc. She has been the Keynote Speaker, session Chair in International Conferences and has delivered Invited Talks in several U.S. Universities and colleges. Dr. Bhatia is an invited member on the National Education Committee of PHD Chamber of Commerce and Industry (2023). She is also an invited member of esteemed circle of Steering</p>						

Committee for the India Chapter of 'Daughters of Themis' (2023); an international Network of Women Business Scholars.
<b>Administrative Assignments</b>
<ol style="list-style-type: none"> <li>1. Officer on Special Duty ( OSD ), Campus of Open Learning ,University of Delhi,( 1<sup>st</sup> October, 2007 - 30<sup>th</sup> September, 2014)</li> <li>2. Officiating Principal, Acharya Narendra Dev College, University of Delhi,(8 April-16 November,2005)</li> <li>3. Honorary Adviser and Consultant, Campus of Open Learning, University of Delhi(October 2014-2015)</li> <li>4. Academic Co-ordinator of English Language Proficiency Course at COL, KeshavPuram, University of Delhi( 2008-2012)</li> <li>5. Project Co-ordinator of UKIERI Projects awarded to Campus of Open Learning, University of Delhi, (2013-2015)</li> <li>6. Project Co-ordinator, "DU-CII Professional Skills Project", University of Delhi (2007-2014)</li> <li>7. Co-ordinator, IGNOU Center at AND College,(2000-2002)</li> </ol> <p>Besides above positions, Dr. Bhatia had been entrusted with several administrative responsibilities in AND college such as Head of Physics Deptt.(Teacher-in-Charge) (1992-1994),(2021-2023),Superintendent of Examinations (2005 &amp;2007),Deputy Superintendent of Examinations (1993-1994), Convener of various committees of the college (1993-2000),Member of several committees of the college, Liaison Officer(2016) etc. and has been Member of courses review committees of University of Delhi (1995-1997),Member, Faculty of Science (1993-95),LOCF Committee of University of Delhi for Solid State Physics (2019)etc.</p>
<b>Areas of Interest / Specialization</b>
Solid State Physics, Reactor Physics, Material science, Nanomaterials
<b>Subjects Taught</b>
Solid State Physics, Thermal Physics, Modern Physics, Optics, Mechanics ,Statistical Mechanics etc.
<b>Research Guidance</b>

## Publications Profile

### List of Publications:

1. Badawi N M, Kuniyil M, **Bhatia M**, Sharma S, Kumar A, Mrutunjaya B, Luqman M, Adil S F (2023). Recent advances in flexible/stretchable hydrogel electrolytes in energy storage devices. *Journal of energy storage*, 73, 10880, 1-30
2. Verma M, Kumar A, Lal S, Khandelwal D, Tomar P K, Dheer M, Hooda S, **Bhatia M**, Sachdeva S, Kumari V. (2023). Ni<sup>2+</sup> ion sensitive sustainable sensors based on 4-vinyl-pyridine-ethyl-acrylate copolymer. *Applied Chemical Engineering*, 6 (1) 38-47
3. Badawi N M, **Bhatia M**, Ramesh S, Ramesh K, Kuniyil M, Shaik M R, Khan M, Shaik B, Adil S F. (2023). Self healing, flexible and smart 3D hydrogel electrolytes based on Alginate, PEDOT:PSS for supercapacitor applications. *Polymers*, 15(571), 1-20
4. Badawi N M, Batoo K M, **Bhatia M**, Ramesh S, Ramesh K, Verma R (2023). Construction of Solid State cotton batteries with safety features of electrolytes/electrodes: A review. *Materials Today Communications*, 34, 1-22
5. Badawi N M, **Bhatia M**, Ramesh S, Ramesh K, Khan M, Adil S F, (2023). Enhancement of the Performance Properties of Pure Cotton Fabric by Incorporating Conducting Polymer (PEDOT:PSS) for Flexible and Foldable Electrochemical Applications, *Journal of Electronic Materials*, 52, 2201-2215
6. Bargujar S, Gambhir G, Raigar M B, Hooda S, Arya D K, **Bhatia M**. (2022). A new Polysaccharide -based- ion-exchange resin for industrial wastewater treatment, *Polimery*, 67(5), 212-219
7. **Bhatia M**, Bhatia S, Siddhartha, (2022). Smart materials for cardiovascular devices. *Materials Today: Proceedings*, 53, 307-309
8. **Bhatia M**, Gupta S. (2022). Space Dependent study of fast neutron spectra and Tritium Production Rate in a Fusion Reactor Blanket of Li<sub>2</sub>O. (2022). *Indian Journal of Pure and Applied Physics*, 60, 833-840
9. Arya S, Kumar P, **Bhatia M**, Kumar S, Sharma J, Siddhartha. (2021). Gamma Rays induced modification in ultra high molecular weight polyethylene (UHMWPE). (2021). *Advances in Polymer Technology*, 2021, 1-8
10. **Bhatia M**, Dutt D, Cuevas J D (2018) From Local to Global: Community Colleges in India and America expand their geographical footprints", *University News, AIU*, vol. 56, No. 28, ISSN-0566-2257, 24-26
11. **Malik M**, Ahmed F, Kothari L. S. (1989). A pulsed- neutron study of 14-MeV neutrons in Li<sup>7</sup>,

Li<sup>6</sup> and natural Lithium assemblies. *Annals of Nuclear Energy*,16,(3),109-117

**12.Malik M**, Ahmed F, Kothari L.S,(1987).Study of Space-dependent fast neutron spectra and Tritium Breeding Ratio in different assemblies of Li<sup>7</sup>, Li<sup>6</sup> and natural Lithium. *Annals of Nuclear Energy*,14,(12),643-651

### **Articles/Inputs Published in following Journals/Newspaper/Reports:**

1.Virtual classroom : an idea whose time has come ", **Bhatia M**, Dutt D, (2020).Article published in Education Times, Times of India ,(http://educationtimes.com/article/editors-pick/74743998/virtual-classroom-an-idea-whose-time-has-come.html), e-paper,22 March,2020

"Reinventing the educational landscape", **Bhatia M**, Dutt D (2020) , University News, AIU(Association of Indian Universities), vol.58,no. 20,pg 10-12, ISSN no. 05662257

2. India Skills Report 2018.

3.India Skills Report 2017.

4."Time to upgrade", **Bhatia M**, Policy watch, Knowledge Economy, Higher Education Special, CII, vol. 5, page 3,2016

### **Book Chapters:**

Study material for PHP-13: 4 chapters for “ Physics of Materials” ; for Indira Gandhi National Open University (IGNOU), 2000 and reprint 2009.

Study material : 4 chapters for the Post graduate M.Sc. course on Reactor Physics for Indira Gandhi National Open University (IGNOU), 2022

Women in business and entrepreneurial roles: Get smarter with STEM, **Bhatia M (2021)** ,Women and Entrepreneurship in India, , Routledge, Taylor and Francis Group, ISBN 978-0-367-75027-5

Smart Economics led by Gender Equality, **Bhatia M (2021)** ,Women and Entrepreneurship in India, , Routledge, Taylor and Francis Group, ISBN 978-0-367-75027-5

### **Reviewer of books/study material :**

Reviewer of the Book on "Modern Introduction to magnetism in solids", Cambridge University Press, 2022

Reviewer of e-learning chapter on "Super conductivity"; ILLI(Institute of Lifelong Learning)University of Delhi,July,2016

### **Conference / Presentations /Workshops**

1."Women empowerment with the power of STEAM", paper presentation at International conference on "Empowering women entrepreneurs from grass root to global"; held at Entrepreneurship Development Institute of India(EDII), Ahmedabad,India,24-25 February,2022

2. Keynote Speaker at 11th International Women and Business conference ,London Metropolitan University, 27 August 2020
3. "Smart women rise and shine with the power of STEM", Presentation at Going Global International Conference for Educators,( Virtual platform) organised by British Council , June 2020
4. Paper presentation at 10th International Conference on Women in Business, University of Bergen,Norway,17th December,2019
5. Invited Talk on "Women in Science and Higher Education", Missouri Western State University, Missouri, U.S, 13th September,2019
6. Paper presentation at 9th International Conference on Women, Business and Law, National Law University, Delhi,22 October,2018
7. Session Co-Chair,9th International Conference on "Women, Business and Law",26 October,2018
8. Invited Talk as Resource Person, USIEF(United States India Educational Foundation),25th May,2018
9. Fulbright Enrichment Seminar: "Long Term Advantages of Innovation and Entrepreneurship", held at University of San Diego,U.S,December,2017
10. Invited Talk as Speaker at USIEF ,25th February,2017
11. Invited Talks for three Public Lectures at SBU University, Missouri ,U.S,December,2017
12. Invited Delegate at Nanotechnology Conclave,CII,Delhi,30-31 August,2017
13. Invited delegate at International Conference on Open Education, Anaheim, California, U.S,October,2017
14. Paper presentation at International Conference on Open Education, Titled: "Open Education in the Indian Context: New approaches and Challenges";held at ,Richmond, Virginia, U.S, 4 November,2016
15. Presentation at Going Global International Conference, organized by British Council, Cape Town, South Africa,2016
16. Attended Workshop on Online Learning ,organized by GET Smarter, Cape Town, South Africa,May,2016
17. Panel expert and Speaker, National Workshop on Community Colleges,Solan,3-4 October,2015
18. UKIERI Workshop on "Computer Gaming", held at West College,Scotland,14-20 July,2015
19. Panel expert and Speaker, National Workshop on Community Colleges, Tezpur University,21-22 April,2015
20. International Seminar for Administrators across the 3 States of U.S; under Fulbright Award,26 October-6 November,2014
21. Poster Presentation at Going Global International Conference, organized by British

Council, Miami, U.S., 19 April-1 May, 2014

22. UKIERI Workshop on "Digital Learning" ,held at Edinburgh College, Scotland, 26 June-6 July, 2014

23. Poster presentation at UKIERI event, British Council, Delhi, 14 October, 2013

24. UKIERI workshops on "Web Designing and Animation" at Edinburgh College, Scotland, (2009-2013)

25. Paper Presentation at 74<sup>th</sup> session of Indian Science Congress Association and "**Young Scientist Award for 1987**" was given for the same.

26. " An eigenvalue and eigenfunction approach to study the behavior of fast neutrons in various materials used in fission and fusion reactors", R. Mohan, P. Mohan, **M. Malik**, F. Ahmed, Presented at " Symposium /workshop on Recent Advances in Physics at Dhaka, Bangladesh, Jan. 1990"

27. Fast Neutron Behaviour in Li and Li<sub>2</sub>O assemblies", **M. Malik** , F. Ahmed, L.S. Kothari, Contributor Poster presentation accepted in International Conference on Neutron Scattering, ICNS, Oxford, UK, August 1991 .

#### Research Projects (Major Grants/Research Collaboration)

- a. Project Co-ordinator, UKIERI Project of Campus of Open Learning on "Digital Learning", in collaboration with Edinburgh College, Scotland, UK. (2012-2015)
- b. Project Co-ordinator, UKIERI Project of Campus of Open Learning on "Computer Gaming", in collaboration with West College, Scotland, UK. (2012-2015).

Organized, co-ordinated and participated in the activities related to UKIERI Project on "Web Designing and Animation" in collaboration with Edinburgh College, Scotland, Open University UK and several Further Education Colleges of UK (2009-2013).

- c. Project Co-ordinator, DU-CII Professional Skills Project, University of Delhi in collaboration with Confederation of Indian Industries. (2009-2014)
- d. Co-PI, Innovation Project, University of Delhi, Title; "Leveraging Big Data in Astronomy and Healthcare", 2015

#### Awards and Distinctions

Visiting Scholar, Department of Physics and Astronomy, Purdue University, U.S,2023-2024

Fulbright -Nehru Scholar for Academic and Professional Excellence,2017-2018

Fulbright- Nehru Award for International Education Administrator's Seminar , 2014

OLF (Outreach Lecturing Fund) Award administered by IIE,U.S for delivering Public Lectures at Southwest Baptist University, Missouri, U.S. 2017

Young Scientist Award ,1987 Awarded by Indian Science Congress Association.

National CAS Scholarship during Masters (M. Sc) course of studies 1981-1983

Tata Memorial Jubilee Scholarship during Bachelor's (B. Sc )course of studies 1978-1981

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#### Association With Professional Bodies

Member, National Education Committee, PHDCCI, 2023

Member, CII National Education Council 2019-2020,2019-2018

Member, CII National Committee on Higher Education 2017-2018 ,2017-2016 & 2016-2015

Member, CII National Committee on Skill Development 2016-2017

Member, Skills and Education Committee, CII Northern Region, 2011-2012

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#### Other Activities

1. Dr. Bhatia gave the inaugural address at Indian Embassy in Washington DC on behalf of Fulbright Delegation of Administrators from India .Under this award, she visited several Community colleges in the U.S in Washington, New York and Florida; to understand the concept and challenges of community colleges, Higher Education framework ; and learnt how vocational education could be promoted at Community colleges in India.

2.Jury Member of i3 National Innovation Awards of India,December,2015

Dr. Mamta Bhatia  
Signature of Faculty Member