

# Department of Chemistry

## Faculty of Natural Sciences

1. Name : **Dr. Faqeer Mohammad**
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4. Permanent Address : Bhaupur, Sheikhpur, Gopalapur  
Jamalapur, Jaunpur-222137 (U.P), India
5. Religion : Islam
6. Date and Place of Birth : December 2, 1951, Jaunpur, U.P., India
7. Martial Status : Married
8. Passport No. :
9. Qualifications



Exam Passed	Board/Univ.	Year	Div	Subjects
High School	U.P Board	1966	I 65.6%	Science, Biology, Maths, English, Hindi
Pre-University (P.U.C.)	AMU., Aligarh	1969	I 69.3%	Physics, Chemistry, Biology, English
B.Sc. (Hons.) Chemistry	AMU., Aligarh	1972	II 59.6%	Chemistry (Main), Zoology, Botany, English
M.Sc. Chemistry (Organic)	AMU., Aligarh	1975	I 69.0%	Organic, Inorganic, Physical, Analytical
M.Phil.	AMU., Aligarh	1979	Awarded	Chemistry
Ph.D.	AMU., Aligarh	1982	Awarded	Chemistry

Topic of Ph.D. Thesis “Chemistry of Natural Products”

- 10. Present Area of Interest** :
1. Natural/Vegetable Dyes  
Natural Products
  2. Organic Reaction Mechanisms

**11. Teaching/Research Experience :**

(a) Teaching :

(i) Guest Faculty 16<sup>th</sup> Sep. 2002 to 05<sup>th</sup> Jan 2004  
(Organic Chemistry) Department of Chemistry  
Jamia Millia Islamia  
New Delhi-110025, India

(ii) Assistant Professor Since 06<sup>th</sup> Jan 2004  
(Organic Chemistry) Joined as permanent Faculty  
Department of Chemistry  
Jamia Millia Islamia  
New Delhi – 110025, India  
on 6<sup>th</sup> Jan 2004.

(b) Research: 18 years.

**12. Detail of Employment:**

Position Held	Organized	Nature of Duties	Period
Research Associateship	UGC, New Delhi	Research	10 <sup>th</sup> Nov. 1983 to 9 <sup>th</sup> Nov. 1988
Quality Control Chemist	Anglo Dutch, Paint Company, Delhi	Paint Testing, Research & Development	Sept. 1993 to Jan. 1994
Vegetable Dyes & Dyeing Technologist Consultant	Self employed Aligarh Consultancy Service, Aligarh	Consultancy Research & Development	Feb. 1994 to 15 <sup>th</sup> Sep. 2002
Guest Faculty	Jamia Millia Islamia New Delhi-110025	Teaching	16 <sup>th</sup> Sept. 2002 to 5 <sup>th</sup> Jan 2004
Asstt. Prof. Organic	Jamia Millia Islamia New Delhi-110025	Teaching/Research	Since 06-01-2004

### **13. Scholarship/Fellowships**

1. Middle School Merit Scholarship		1961-1964
2. High School Merit Scholarship (U.P)		1964-1966
3. Studentship- Pre-Medical (A.M.U,Aligarh)		1969-1970
4. Studentship, M.Sc. (A.M.U,Aligarh)		1973-1974
5. J.R.F.	CSIR	Jan. 1976 – May 1978
6. J.R.F.	UGC	June 1978– May 1980
7. S.R.F	UGC	June 1980– Nov 1982

### **14. Supervision of Research Work**

#### **Ph. D. Supervisor**

##### ***(i) Ph.D. Theses Guided/Co-guided:***

1. Co-guided, Thesis Title: "Oxidative degradation of surfactants by different metal ions"  
Name of Student: Manmeet Singh Manhas  
Year of Ph.D. Awarded: 2007
2. Thesis Title: "Development of shades on wool with lac (Lacifer lacca/Kerria lacca) and cutch (Acacia catechu) natural dyes and their characteristic evaluation"  
Name of Student: Mohd Ibrahim Khan  
Year of Ph.D. Awarded: 2011
3. Thesis Title: "Development of shades on wool with madder (Rubia Cordifolia) and Henna (Lawsonia inermis/Lawsonia alba) and their characteristics evaluation"  
Name of Student: Shafat Ahmad Khan  
Year of Ph.D. Awarded: 2012

4. Thesis Title: "Development of shades on wool with Dolu/Indian Rhubarb (*Rheum emodi*) and Kamala powder (*Mallotus phillipinensis*) and their characteristic evaluation"

Name of Student: Mohd Yusuf

Year of Ph.D. Awarded: 2013

5. Thesis Title : "Development of shade on wool with gallnut (*Quecus infectoria*) and pomegranate (*Punica granatum*) natural dyes and their characteristic evaluation"

Name of Student: Mohammad Shahid

Year of Ph.D. Awarded: 2014

**Number of Ph.D. Students Presently Working: 04**

**M. Tech. Dissertation as Co-Supervisor:**

1. Co-Supervised M. Tech (Post Harvest Engineering & Technology) Dissertation entitled "Extraction of Natural Dyes From Agricultural Product including Wastes and their application on Wool", of Merajuddin Khan, Department of Post Harvest Engineering & Technology, Faculty of Agricultural Sciences, AMU., Aligarh, 202002.

**15. Research Projects handled as principal investigator**

Technopreneurship support to the project Standardization of Natural/Vegetable Dye shades under Technopreneur Promotion Programme (Tepp) supported under PATSER scheme of DSIR, Min. of Sc. & Tech., Govt. of India, New Delhi. Feb. 2000- Feb. 2001

**16. Books/Chapters**

1. Shahid-ul-Islam, M. Shahid, **F. Mohammad**, Future Prospects of Phytosynthesized Transition Metal Nanoparticles as Novel Functional Agents for Textiles, in Advanced Materials for Agriculture, Food and Environmental Safety, A. Tiwari and M. Syvajarvi (Editors), **Wiley, USA (2014), ISBN: 978-1-118-77343-7.**

2. Shahid-ul-Islam, and **F. Mohammad**. Emerging Green Technologies and Environment Friendly Products for Sustainable Textiles, in Roadmap to Sustainable Textiles and Clothing, S. S. Muthu (Editor), **Springer, New York, USA (2014), ISBN: 978-981-287-109-1.**

### **17. Research Papers Published**

1. H. M. Taufeeq, **F. Mohammad** and M. Ilyas ‘Bioflavones from Cupressus govaniiana’. *India J. Chem.*, 1979, 17B, 535.
2. **F. Mohammad**, H.M. Taufeeq, M. Ilyas and W. Rahman and J.Chopin ‘C-glycosylflavones from Ochna squarrosa Linn’. *Indian J. Chem.*, 1982, 21B, 167.
3. **F. Mohammad**, H.M. Taufeeq, M. Ilyas and W. Rahman ‘Bioflavones from Encephalartos woodii, E. Transvenosus and E.villosus Lem.(Zamiaceae)., *Indian J. Chem.*, 1983, 22B, 184.
4. M. Khan, M. A. Khan, P. K. Srivastava, **F. Mohammad**, Natural dyes on wool with Tesu (Flame of the Forest), Dolu (Indian Rhubarb), Amaltas (Cassia fistula), *Colourage*, May 2004, 33.
5. M. A. Khan, M. Khan, P. K. Srivastava, **F. Mohammad**, Extraction of Lac red dye and its application on wool, *Colourage*, June 2004, 27.
6. M. Ali Khan, M. Khan, P. K. Srivastava, **F. Mohammad**, Extraction of natural dyes from Myrobalan, Gallnut and Pomegranate and their application on wool, *Colourage*, December 2005, 53.
7. M. Ali Khan, M. Khan, P. K. Srivastava, **F. Mohammad**, Extraction of natural dyes from Cutch, Ratanjot and Madder and their application on wool, *Colourage*, January 2006, 61.

8. M. S. Manhas, **F. Mohammad**, Z. Khan, A kinetic study of  $\beta$ -cyclodextrin by permanganate in aqueous media, *Colloids and Surfaces A: Physiochem. Eng. Aspects*, 2007, 295, 165-171.
9. M. Ali. Khan, M. Khan, P.K. Srivastava & **F. Mohammad**, Natural dyeing on wool with indigo, and yellow dyes Kamala, Berberine, Onion peel, Amla, Anar and Palas in combination with indigo, *Colourage*, November 2007, 54.
10. M.S. Manhas, P. Kumar, **F. Mohammad**, Z. Khan, Oxidative degradation of non-ionic surfactant (TitonX-100) by chromium (VI), *Colloids and Surfaces A: Physiochem. Eng. Aspects*, 2008, 320, 240-246.
11. M. I. Khan, S. A. Khan, M. Yusuf, M. Shahid, M. A. Khan, **F. Mohammad**, Eco-friendly shades on wool using mixed mordants with *Acacia catechu* (Cutch), *Colourage*, August 2010, 81-88.
12. M. I. Khan, A. Ahmad, S. A. Khan, M. Yusuf, M. Shahid, N. Manzoor, **F. Mohammad**, Assessment of antimicrobial activity of catechu and its dyed substrate, *J. Clean. Prod.*, 2011, 19, 1385-1394.
13. S. A. Khan, M. I. Khan, M. Yusuf, M. Shahid, **F. Mohammad**, M. A. Khan, Natural dye shades on woollen yarn dyed with *Mallotus philippinensis* (Kamala) using ecofriendly metal mordants and their combination, *Colourage*, November 2011, 34.
14. M. Yusuf, M. Shahid, S. A. Khan, M. I. Khan, **F. Mohammad**, M.A. Khan, Dyeing studies with henna and madder: A research of effect of tin (II) chloride mordant, *J. Saudi Chem. Soc.*, (2011) [doi: 10.1016/j.jscs.2011.12.020](https://doi.org/10.1016/j.jscs.2011.12.020).
15. M. Yusuf, A. Ahmad, M. Shahid, S. A. Khan, M. I. Khan, , N. Manzoor, **F. Mohammad**, Assessment of colorimetric, antibacterial and antifungal properties of

- woollen yarns dyed with the extract of the leaves of henna (*L. inermis*). *J. Clean. Prod.*, 2012, 27, 42-50.
16. M. Shahid, A. Ahmad, M. Yusuf, M. I. Khan, S. A. Khan, N. Manzoor, **F. Mohammad**, Dyeing, fastness and antimicrobial properties of woollen yarns dyed with gallnut (*Quercus infectoria* Oliv.) extract. *Dyes Pigments*, 2012, 95, 53-61.
  17. S. A. Khan, A. Ahmad, M. I. Khan, M. Yusuf, M. Shahid, N. Manzoor, **F. Mohammad**, Antimicrobial activity of wool yarn dyed with *Rheum emodi* L. (Indian Rhubarb). *Dyes Pigments*, 2012, 95, 206-214.
  18. **F. Mohammad**, M. Yusuf, M. Shahid, S.A. Khan, M.I. Khan, Shahid-ul-Islam, M.A. Khan, Dyeing of wool with extracts of henna leaves using extracts of mixed metal mordants, *Colourage*, July 2012, 51-57.
  19. M. Yusuf, M. Shahid, S. A. Khan, M. I. Khan, **F. Mohammad**, M. A. Khan, A study on eco-friendly shades developed from henna (*Lawsonia inermis*) leaves extract and evaluation of their colour and fastness properties, *Man Made Text. India*, 2012, 40, 229-233.
  20. M. I. Khan, M. Shahid, S. A. Khan, M. Yusuf, **F. Mohammad**, M. A. Khan, Studies on application of lac natural dye on wool using eco-friendly metal mordants, *Colourage*, March, 2012, 42-51.
  21. M. Yusuf, M. Shahid, S. A. Khan, M. I. Khan, Shahid-ul-Islam, **F. Mohammad**, M.A. Khan, Eco-dyeing of wool using aqueous extract of the roots of Indian madder (*Rubia cordifolia*) as natural dye. *J. Nat. Fibre.*, 2013, 10, 14-28.
  22. M. Shahid, Shahid-ul-Islam, **F. Mohammad**, Recent advancements in natural dye applications: A review, *J. Clean. Prod.*, 2013, 53, 310-331.

23. Shahid-ul-Islam, M. Shahid, **F. Mohammad**, Perspectives for natural product based agents derived from industrial plants in textile applications- A review, *J. Clean. Prod.*, 2013, 57, 2-18.
24. Shahid-ul-Islam, M. Shahid, **F. Mohammad**, Green Chemistry Approaches to Develop Antimicrobial Textiles Based on Sustainable Biopolymers-A Review, *Ind. Eng. Chem. Res.*, 2013,52, 5245-5260.
25. Shahid-ul-Islam, Luqman Jameel Rather, M. Shahid, M. A. Khan, **F. Mohammad**, Study the effect of ammonia post-treatment on color characteristics of annatto-dyed textile substrate using reflectance spectrophotometry. *Ind. Crop. Prod.*, 2014, 59, 337-342.
26. S. A Khan, Shahid-ul-Islam, M. Shahid, M. I. Khan. M. Yusuf, Luqman J. Rather, M. A. Khan, **F. Mohammad**, Mixed metal mordant dyeing of wool using root extract of *Rheum emodi* (Indian Rhubarb/Dolu). *J. Nat. Fibre* (Accepted on 05/03/2014).

#### **18. Research Papers Presented/Accepted in Seminars/Conferences:**

1. Flavonoidic constituents from *Strobilanthes callosus* (Acanthaceae) Abstract, 2<sup>nd</sup> Annual Conference of Indian Council of Chemists, Srinagar, ORG, ) 0.98, 37 (1982).
2. Difficulties faced by the Science Graduates in the Development of New Enterprise, Abstract, National Seminar on Development of Entrepreneurship culture, Problems and Remedies, organized by Mechanical Engineering Department, ZH College of Engineering and Technology, A.M.U., Aligarh, 24<sup>th</sup> – 25<sup>th</sup> Feb. 1990.
3. Contributed a paper on Natural dye in Carpet Expo India<sup>95</sup> Brochure, 1995.



4. "Extraction of Natural Dyes from Biomass and their application on Wool" presented in XXXV Annual Convention and National Symposium held at OUA & T, Bhubneshwar during 22<sup>nd</sup> - 24<sup>th</sup> January 2001.
5. 'Study of combination Mordants on Cutch', Abstract Published in XXXVI Annual Convention of ISAE held IIT, Kharagpur, January 2002.
6. M.I. Khan, S.A. Khan, M. Yusuf, M. Shahid, **F. Mohammad**, Various shades of laccaic acid (lac dye) on wool using eco-friendly Mordants, 11<sup>th</sup> CRSI National Symposium in Chemistry, NCL, Pune, 6-8 February 2009.
7. S.A. Khan, M.I. Khan M. Yusuf, M. Shahid, **F. Mohammad**, Dyeing of wool with *Rheum emodi* natural dye using iron as mordant, VI RCP Annual National Symposium-2010, Department of Chemistry & Centre for Advanced studies in Chemistry, Punjab University, Chandigarh, 5-6 March 2010.
8. M. Yusuf, M.I. Khan, S.A. Khan, M. Shahid, **F. Mohammad**, Dyeing of wool with Henna (*Lawsonia inermis*) natural dye using combination of ecofriendly mordants, VI RCP Annual National Symposium-2010, Department of Chemistry & Centre for Advanced studies in Chemistry, Punjab University, Chandigarh, 5-6 March 2010.
9. M. Shahid, M. Yusuf, M.I. Khan, S.A. Khan, **F. Mohammad**, Dyeing of wool with Gallnut (*Quercus infectoria*) natural dye using alum as mordant, VI RCP Annual National Symposium-2010, Department of Chemistry & Centre for Advanced studies in Chemistry, Punjab University, Chandigarh, 5-6 March 2010.
10. M. Shahid, **F. Mohammad**, Effect of ferrous sulphate mordant on colour, fastness and antimicrobial activity of woollen yarn dyed with pomegranate peel extract,

*National Conference on 'Chemistry: Frontiers and Challenges'*, School of Sciences, IGNOU, New Delhi, 13 October 2011.

11. Shahid-ul-Islam, **F. Mohammad**, Effect of ferrous sulphate mordant on colour, antimicrobial activity of woollen yarn dyed with *Tectona* leaves extract, in seminar on "*Recent advance in Chemistry 2012*", Department of Chemistry, Faculty of Natural Sciences, Jamia Millia Islamia, New Delhi on March 12, 2012.
12. Shahid-ul-Islam, **F. Mohammad**, Development of shades on natural protein fibre using combination of Eco-friendly mixed metal mordants, *International Conference on Interface between Chemistry and Environment (ICICE)*, Delhi University, 13-14 December, 2012.
13. Shahid-ul-Islam, **F. Mohammad**, Dyeing studies with *Bixa orellana* - a research on effect of ferrous sulphate mordant, *International conference on chemistry frontiers and challenges*, , Aligarh Muslim University, 2-3 March, 2013.
14. Luqman Jameel Rather, **F. Mohammad**, Studies on dyeing of natural protein fibre with *Acacia nilotica* natural dye using combination of ecofriendly mordants, *International conference on Chemistry: Frontiers & Challenges*, Department of Chemistry, Aligarh Muslim University, Aligarh, 2-3 March, 2013.
15. Shahid-ul-Islam and **F. Mohammad**, Colorful textiles with anticandidal activity using some polyphenol rich organic natural dyes, in National Symposium on Chemistry Department of Chemistry, AMU, Aligrah, March 22, 2014.
16. Luqman Jameel Rather and **Faqeer Mohammad**, Dyeing of natural protein fibre wool with lac (*Kerria lacca*) as natural red dye using babul (*Acacia nilotica*) as bio-

mordant, in National Symposium on Chemistry Department of Chemistry, AMU, Aligarh, March 22, 2014.

17. Luqman Jameel Rather and **Faqeer Mohammad**, Investigation on interaction of polyphenols and flavonoids of *Acacia nilotica* natural dye with natural protein fibre using fluorescence and FT-IR spectroscopy, in Seminar on Recent Advances in Chemistry (RAC-14), Department of Chemistry, Jamia Millia Islamia, New Delhi, March 24, 2014.

### **19. Invited Lectures**

1. Delivered an invited lecture at EFDC, Kannauj on the use of Natural/Vegetable dye in flavour and fragrance industry with reference to *Onosma echioides* (Ratanjot) on 15<sup>th</sup> May 1999.
2. Delivered an invited lecture on Natural/Vegetable dye at National Seminar on Indian Natural Colouring Agents Beyond 2000 A.D. at Regional Science Center, Lucknow from 11<sup>th</sup> – 13<sup>th</sup> Feb 2000.
3. Delivered an invited Lecture on Natural/Vegetable dyes at Faculty of Post Harvest Engg. & Tech., AMU, Aligarh on 15<sup>th</sup> March, 2008.
4. Delivered an invited Lecture on Natural/Vegetable dyes at Faculty of Post Harvest Engg. & Tech., AMU, Aligarh on 28<sup>th</sup> March, 2009.
5. Delivered an invited Lecture on Natural/Vegetable dyes at Faculty of Post Harvest Engg. & Tech., AMU, Aligarh on 31<sup>st</sup> March, 2011.
6. Delivered an invited Lecture on Natural/Vegetable dyes at Faculty of Post Harvest Engg. & Tech., AMU, Aligarh on 25<sup>th</sup> March, 2013.

**20A. Participation in Seminars, Conferences, Congresses, Conventions, Symposia & workshops**

1. Attended seminar on Eco-friendly dyes & processing organize by Textile, Committee & AEPC at PHD Chamber of Commerce & Industry, New Delhi on May 1995.
2. Attended International Seminar/Exhibition on Dyes & Dye Intermediates at World Trade Centre (Mumbai) from 27<sup>th</sup> – 29<sup>th</sup> Oct 1995.
3. Attended bilateral Indo-Japanese Symposium at I.I.T Delhi from 6<sup>th</sup> – 7<sup>th</sup> Nov. 1995.
4. Attended International Seminar on Indian Carpet Industry at Vigyan Bhawan from 29<sup>th</sup> Feb. – 1<sup>st</sup> March 1996.
5. Attended NITRA Seminar on Eco-friendly textile at PHD Chamber of Commerce & Industry, New Delhi on 18<sup>th</sup> July 1996.
6. Attended Vegetable Dye workshop for Carpet industry sponsored by D.C. Handicraft as expert at the Indian Institute of Carpet Technology, Bhadohi from 10<sup>th</sup> – 14<sup>th</sup> Sep. 1996.
7. Attended Workshop & Seminar organized by STEP Foundation at AICMA Bhadohi on Innovation in Carpet Technology and initiative from combating Child labour in Indian Carpet Industry from 5<sup>th</sup> to 6<sup>th</sup> Nov. 1996.
8. Attended 5<sup>th</sup> Asia Forest Network meeting at Surajkund, Haryana from 3<sup>rd</sup> – 6<sup>th</sup> Dec. 1996.
9. Attended Seminar on Silk garment construction and export marketing at New Delhi sponsored by ISEPC-CSB-nift. on 23<sup>rd</sup> July 1997.

10. Attended National Textile Seminar “Fibre to Garment Integration to face Global Challenges” at India International Center, New Delhi from 21<sup>st</sup> – 22<sup>nd</sup> Nov. 1997.
11. Attended Wool Meet<sup>98</sup> and National Seminar on “Problems and Prospects of Indian Wool Industry” jointly sponsored by IWMF (Mumbai), Wool Mark (New Delhi) and Wool Strategy Group (Australia) at Taj Palace Hotel, New Delhi from 29<sup>th</sup> June– 1<sup>st</sup> July 1998.
12. Attended Convention on Natural Dyes at IIT Delhi 9<sup>th</sup> -11<sup>th</sup> Dec. 1999.
13. Participated in Panel discussion on Economic Viability of Setting up of Carpet Washing and Drying plant at Bhadohi/Mirzapur organized by UPEC at AICMA Bhadohi on 9<sup>th</sup> March 2000.
14. Attended Convention on Natural Dyes at IIT Delhi from 17<sup>th</sup> -18<sup>th</sup> Dec.2001.
15. Attended “National Campaign on Quality and Compliances” organized by Textile Committee, Min. of Textiles, Govt. of India at Maurya Sheraton Hotel, New Delhi on 5<sup>th</sup> Feb. 2002.
16. Attended International Symposium/Workshop on Natural Dyes, Hyderabad, Nov. 5-11, 2006.
17. Attended Seminar on “*Recent advance in Chemistry 2009*” organized by Department of Chemistry, Faculty of Natural Sciences, Jamia Millia Islamia, New Delhi on January 19, 2009.
18. Attended seminar on “*Recent advance in Chemistry 2009*” organized by Department of Chemistry, Faculty of Natural Sciences, Jamia Millia Islamia, New Delhi on March 10, 2010.

19. Attended seminar on “*Recent advance in Chemistry 2011*” organized by Department of Chemistry, Faculty of Natural Sciences, Jamia Millia Islamia, New Delhi on March 22, 2011.
20. Attended seminar on “Chemistry in our lives” organized by Department of Chemistry, Faculty of Natural Sciences, Jamia Millia Islamia, New Delhi on March 28, 2011.
21. Attended seminar on “*Recent advance in Chemistry 2012*” organized by Department of Chemistry, Faculty of Natural Sciences, Jamia Millia Islamia, New Delhi on March 12, 2012.

**20B. Technical Training Received**

S. No.	Technical Training	Year	Sponsored by
1.	Entrepreneurship Development Programme	1989	Organized by Mechanical Engg. AMU., Aligarh
2.	Technical Entrepreneur Course (Paint & dry colours)	1989	ITC (Ministry of Industries, Govt. of India) Nilokheri, Haryana

**21. Live Demonstration, Display and workshops conducted**

1. Live Demonstration of vegetable dyeing at Carpet Expo India<sup>95</sup> at Pragati Maidan, New Delhi from 26<sup>th</sup> Feb. – 1<sup>st</sup> March. 1995.
2. Conducted training Programme on Natural Dye organized by Carpet Division UPEC, Bhadohi and NHDC (Lucknow), 27<sup>th</sup> -29<sup>th</sup> Dec. 1995.
3. Live Demonstration of vegetable dyeing at Carpet Expo India<sup>96</sup> at Pragati Maidan, New Delhi from 26<sup>th</sup> – 29<sup>th</sup> Feb.1996.

4. Display of Jute Diversity fabrics dyed with Natural/Vegetable dye at Jute India<sup>97</sup> at Pragati Maidan, New Delhi and also attended seminar on “Indian Jute-Perspective” from 20<sup>th</sup> -22<sup>nd</sup> Oct. 1997.
5. Live Demonstration of vegetable dyeing at Carpet Expo India<sup>98</sup> at Pragati Maidan, New Delhi from 11<sup>th</sup> Feb. – 14<sup>th</sup> Feb. 1998.
6. Attended Transfer of Technology Camp in Khadi Wet Processing at KKGSS, Bengiri, Hubli (Karnataka) from 21<sup>st</sup> – 23<sup>rd</sup> Dec. 1998 and also demonstrated live of Natural/Vegetable dyeing on khadi materials.
7. Live Demonstration of Natural/Vegetable dyeing and display of Natural dye shades at Swadeshi Mela at Pragati Maidan from 25<sup>th</sup> -30<sup>th</sup> Jan.1999 and also attended seminar on related themes.
8. Live Demonstration of Natural/Vegetable dyeing and display of Natural dye shades at Carpet Expo India<sup>99</sup> at Pragati Maidan, New Delhi from 26<sup>th</sup> Feb. – 1<sup>st</sup> March. 1999.
9. Attended 88<sup>th</sup> Indian Science Congress as exhibitor in “Innovative India” under Tepp, DSIR, MOST, New Delhi at Pusa, N. Delhi from 3<sup>rd</sup> -7<sup>th</sup> Jan. 2001.
10. Displayed Natural/Vegetable dye shades at Carpet Expo India<sup>01</sup> at Pragati Maidan from 27<sup>th</sup> – 2<sup>nd</sup> Feb.2001.
11. Attended 89<sup>th</sup> Indian Science Congress as exhibitor in “Innovative India” under Tepp, DSIR, MOST, New Delhi at Lucknow University from 3<sup>rd</sup> -7<sup>th</sup> Jan. 2002.
- 22. Recognition as Vegetable Dye Expert and Contribution to the Research & Development of Natural/Vegetable Dye**

1. Single Handedly introduced vegetable dye in carpet industry of Bhadohi-Mirzapur - Varanasi belt in 1994.
2. Recognized by Ikea<sup>R</sup> Sweden as vegetable dye expert.
3. Invited by ILRI, Ranchi to work on Lac Red Dye from 3<sup>rd</sup> – 7<sup>th</sup> Oct. 1994 and shades are also submitted for display in the Museum of ILRI, Ranchi.
4. Recognized by DC Handicrafts & DC Handlooms, NHDC, (Lucknow), BTRA (Mumbai), NITRA (Ghaziabad), WRA (Thane), IWMF (Mumbai), WVEPC (New Delhi), Textile Committee (Mumbai), TWC (1WS) (India/South East), IGEP (New Delhi), KVIC (Mumbai) and UPEC (Kanpur).
5. Recognized as vegetable dye expert by Wools of New Zealand.
6. Recognized as vegetable Dye Consultant by Pakistan Carpet Industry.
7. Recognized as vegetable dye consultant by UNDP, New Delhi for UNDP's aided National Jute Programme for Jute and Jute Diversified Products.
8. CEPC's circular dated 20/8/96 to AICMA Bhadohi, CEPC's Regional Office Bhadohi & EUPEA Varanasi for the use of the services of Aligarh Consultancy Service for the development and use of vegetable dye in Indian Carpet Industry.
9. Co-ordinated the visit of German designer Michael Barkowitz sponsored by IGEP – CEPC for the development of Indian theme designs "Passage to India", Oct. 1996.
10. Having details discussion with Mr. John Paton representative of Wools of New Zealand and M. Desai, Area Director (India) on 26<sup>th</sup> Nov. 1996 at Aligarh regarding the use of vegetable dye in Indian Carpet Industry and use of vegetable dye as tool for identification of 100% NZ wool with blended wool.



11. Developed more than 2100 natural/vegetable dye shades on wool.
12. Developed 24 natural/vegetable dye shades on dupion cloth (Silk).
13. Developed 37 natural/vegetable dye shades on (Jute-Cotton) JDP.
14. Developed 13 shades with natural/vegetable dye on denim cloth and also explored its commercial utility in Denim Industry.
15. Co-ordinated the visit of Michael Barkowitz, German designer, sponsored by IGEP – CEPC for the development of Neo-classic, classic Indian three designs “Passage to India” from 30<sup>th</sup> – 31<sup>st</sup> July 1997.
16. A two member team of Mr. R.D. Nagle (Consultant) and Mrs. A.S. Bhat, Supervisor-I from Khadi and Village Industries Commission (Mumbai) Visited Aligarh from 28<sup>th</sup> -31<sup>st</sup> Aug. 1997 to discuss the use of vegetable dye in khadi products.
17. MoU between Shri Ajay Prasad, NPM, NJDP assisted by UNDP & Dr. Faqeer Mohammad representing Aligarh Consultancy Service on 13<sup>th</sup> Nov. 1997 for the development and promotion of Natural/Vegetable dye in Jute and Jute diversified products.
18. Used natural dyeing as a tool to differentiate rugs containing 100% NZ wool with blended wool for Wools of New Zealand.
19. Resource Person, AU-PPST Foundation, Anna University, Chennai - 600025 (T.N.).

**23. Country Visited**

1. Visited Lahore (Pakistan) for the development and use of vegetable dye in Pakistani Carpet Industry from 30<sup>th</sup> Dec.1996 and 6<sup>th</sup> Jan. 1997.

**24. Indian Visits**

1. Visited on the invitation of M/S Tajna Shellac Pvt. Ltd. Khunti, Ranchi to explore the possibilities of revival of production of Lac Red Dye.
2. Visited Indore on the invitation of M/S Sattal Kattha & Chemical Co. Indore for the development of Vegetable/Natural Dyes.