

DR. (Mrs.) V. KUSUM DEVI

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Educational Qualifications:

1. Ph.D. Awarded from Bangalore University, India in the year 2000 for the research work entitled “**Percutaneous Drug Delivery Systems Of Selected Analgesic And Anti-Inflammatory Drugs-Individual And Combination Systems**”
2. M.Pharm. – First Class First Rank - Bangalore University, India in the year 1985.
3. B. Pharm. – First Class First Rank - Bangalore University, India in the year 1983.

Professional Interests:

- Active involvement in Pharmaceutical academics such as teaching, training, guiding evaluating and orienting fellow students in different subjects under Pharmaceutics & Pharmaceutical Marketing.
- Structuring and compiling the curriculum for Theory and Practicals for subjects at graduate and undergraduate levels..
- Attending and Organising workshops and seminars on Health awareness Programs especially in the field of Diabetes, AIDS.

Research Interests:

- Developing Novel Drug Delivery Systems
- Optimizing delivery of antihypertensive, antidiabetic, antineoplastic agents, antiretrovirals
- Solubility improvement studies
- Investigation and Evaluation of excipients for dosage form development and standardisation
- Recent trends in Pharmaceutical packaging aspects, Pharmaceutical product launch strategies
- Providing Subject and Technical expertise in Patent Infringement matters.

Recognitions received:

- Indian Pharmaceutical Association **Gold Medal** from Bangalore University in 1983 for securing the first rank in B. Pharm.
- Indian Drug Manufacturers Association (IDMA), Bombay **Shri G.P. NAIR Award** of 1983.
- Karnataka (India) **State Award** of 1983.
- Vasavi Union Gold Medals of 1983 & 1985.
- Awarded a grant by the Department of Science and Technology(DST), Government of India for presenting a Research Paper in the 136th British Pharmaceutical Conference-1999, Cardiff, UK.

- Awarded a grant by the All India Council for Technical Education(AICTE) for co-authoring a text book on Pharmaceutical Engineering for III B.Pharm students.
- Sanctioned a grant of Rs.8.70 lakhs in 2003 from AICTE, New Delhi under R & D scheme for research project entitled "AIDS (Antiretroviral) therapy - The vesicular system approach.
- Sanctioned a grant in May 2004 by the All India Council for Technical Education(AICTE), New Delhi for convening a workshop on "Environmental Management in the Pharmaceutical Industry".
- Recognised by the Rajiv Gandhi University of Health Sciences as **Guide** for technical supervision of Masters' and Ph.D., research projects in pharmacy under the university.
- Awarded Travel Grant by the All India Council for Technical Education(AICTE), New Delhi for presenting two research papers in Canadian Society for Pharmaceutical Sciences (CSPS) – 7th Annual Symposium held at Vancouver, British Columbia, Canada from the 9 – 12th June 2004.
- Awarded Travel grant by the Department of Science and Technology(DST), Government of India for presenting a Research Paper in an International conference 2004.
- Awarded a Research Grant of Euros 2,485 € from Ms.INDENA S.P.A , Milano, Italy for carrying out research work on "Evaluation of biodegradable polymeric implants containing Paclitaxel for breast cancer, 2nd August 2005.
- Scientist Mentor for a project sanctioned financial assistance of Rs.7.20 lakhs by Department of Science and Technology, Feb. 2007. Project is entitled "Formulation and evaluation of novel drug delivery systems of selected antiretrovirals to standardize AIDS therapy."
- **Consultant – Subject Expert** for a Canadian Pharma multinational **Abbott Laboratories Limited** with respect to their Patent Infringement matters.
- **Guest faculty** Strides Arco Labs, Bangalore. A research and manufacturing Pharmaceutical Corporation engaged in the formulation of all sterile and non-sterile dosage forms.
- **Resource person** for Medical Education Research Centre – Pharmacy Division.
- **Member, Board of Studies in Pharmacy (PG)**, Rajiv Gandhi University of Health Sciences.
- Conferred "Second Prize" during the 46th National convention of Indian Hospital Pharmacist Association and Silver Jubilee celebration of IHPA U.P. State Branch for presentation of paper on "Perceptions of consumers about Pharmacists – A Market Research Study" quantitative findings of the study conducted in collaboration with Delhi Pharmaceutical Trust.
- **Member, Ph.D. Registration Committee** for Pharmacy faculty, Rajiv Gandhi University of Health Sciences.

Current Professional Activities:

Academics:

- Teaching Under Graduate level students in theoretical and practical aspects of Pharmaceutical Engineering
- Training students in the subject area of Industrial Pharmacy, Formulation Production Management, Formulation Technology and Validation at the Post Graduate level

- Guiding and functioning actively with Ph.D., and M.Pharm students in their research projects

Research:

- Post graduate research projects: 28
- Doctoral research projects: 08
- Industrial projects: 05
- Paper publications: 40
- Paper presentations: 43
- Books authored: 02

Others:

- Member, Board of Studies in Pharmacy(Post Graduate), Rajiv Gandhi University of Health Sciences, Bangalore.
- Member of Examination panels of the Rajiv Gandhi University of Health Sciences, Kakatiya University and MGR Medical University.
- Involved in routine student evaluation procedures such as Conducting examinations, Paper setting, Paper Moderation/scrutiny, and Evaluation as per the different Universities Norms.
- Sketching and framing the syllabus for Pharmaceutical Engineering, Formulation Technology and Validation, Formulation Production Management.
- Invited Referee for reviewing suitability of research papers for publication in reputed International and National Pharmacy journals.
- Inspection visits to various colleges in India under the PCI and AICTE affiliation and approval procedures for pharmacy Institutions in India
- Inspection visits to various colleges in Karnataka under the RGUHS affiliation and approval procedures for pharmacy Institutions.

Experience and Work Responsibilities:

Academics:

- Handled different subjects in the area of pharmaceutics such as Dispensing and Formulative Pharmacy, Cosmetics, Pharmaceutical Engineering, Industrial Pharmacy and Production Control, Quality Assurance and Regulatory Affairs
- Worked as the Principal of Milind Institute of Pharmacy, Bangalore, India from 24.7.1989 to 15.10.1992, During this tenure the job responsibilities included teaching B.Pharm students and administrative functions of the college.

Books Authored:

- Co-authored a Book on “Pharmaceutical Engineering- Principles and Practices” .
- A practical manual on “Unit Operations in Pharmacy”

Industrial:

Served as a Management Executive from 25.7.1985 to 21.7.1989 in Astra IDL Ltd., Bangalore, a Swedish Multinational Pharmaceutical Company in the department of **Formulation and Development** and worked for the following projects

- Development of various types of Novel Drug Delivery Systems and conventional formulations such as Tablets, Capsules, Liquid Orals, Parenterals, Ointments, Nutritional products and Cosmetic such as shampoos
- Finalizing the specifications and control tests for both raw materials and finished products.
- Trouble shooting in production
- Expertise in handling of sophisticated instruments such as UV–Spectrophotometer, Gas Chromatograph, HPLC etc
- Preparing “Standard Operating Procedures” for various equipment used in the Pharmaceutical Plant
- Preparation of batch production records for production of routine products.
- Cost reduction.
- Pilot scale up studies for various dosage forms.

Current Research Activities:

Ph.D Projects completed:

- Optimisation Of Transmucosal Buccal Drug Delivery Systems for both Systemic and Local Action for Selected Drugs.
- Optimisation Of Drug Delivery For Type – II Diabetes Using Novel Drug Delivery Systems.
- Evaluation of biodegradable polymeric Implants/Microspheres containing antineoplastic agents for breast cancer.
- Transdermal delivery of selected antiretroviral drugs using vesicular carriers.

Ph.D Projects in progress:

- Optimizing Therapy for Herpes Simplex Virus infection through Novel Drug Delivery System (NDDS)
- Integration of Ayurveda and Pharmaceutical Technological Advances to make Effective Drug Delivery System of Gymnemic Acid.
- Formulation and development studies on a novel drug delivery system for management of AIDS in children simultaneously affected by tuberculosis.

Industrial Projects :

- Investigation of Skin Irritation Potential of the given compound
- Preparation and Evaluation of Dental Gels, Creams and Ointments
- Formulation and Evaluation of Transdermal drug delivery systems for selected compounds including *in vivo* studies.
- Formulation and Evaluation of products for local application for selected compounds
- A survey on a study related to consumer perception regarding the retail pharmacist

On going research projects at Post Graduate level

- **Comparative market potential study between four drugs for treatment of osteoporosis in two Asian Metropolitan cities of Bangalore and Tehran.**

- To study the market potential of anti-inflammatory analgesic agents in the dental segment
- Study of market potential of the anti spasmodic dicyclomine hydrochloride.

Projects completed at Post Graduate level:

- Making a Launch Strategy for a new brand of an emerging company in the International and Domestic market
- Extent and pattern of use of Topcal-O in Osteoporosis in two sample cities
- Current trends and opportunities for Nutraceuticals in Indian market.
- Development of a Marketing Strategy for the launch of Herbal lipid lowering preparation
- Patentibility of incremental inventions in the pharmaceuticals – A study
- Determining the market potential of Etodolac in pain management
- Recent changes in patent law of selected Aseapaccific countries in comparison with changes in Indian Patent Law.
- Prevalence of nosocomial infections in health care centres in south India : A study
- Dual role of Medical Representative “Marketer” or “Educator”- a Clinician’s perspective: A Survey in two cities
- A study on mining and mapping Patent information related to Anti-diabetic segment
- A study of practical parameters and their relative importance as perceived by various stake holders in clinical trials
- Market awareness and development of a positioning strategy for a skin age retarding formulation
- Power of Packaging in the Pharmaceutical Industry
- Development and Evaluation of topical dosage forms of Ebastine – both *in vitro* and *in vivo*.
- Project Planning for Clinical Trials and Developmental Studies of a Hepatoprotective Formulation
- Launch strategy for a new Herbal based Nutraceutical preparation for Parkinsonism
- Estimation of market demand for Tamsulosin Hydrochloride in comparison with Terazosin and Doxazosin.
- Impact of the New Drug Policy 2002 on The Pharmaceutical Industry.
- Rational Malaria Control - A sample review of the involvement of the private sector in the current situation with respect to selected regions.
- Preparation of a Launch Strategy for a new Drug Combination including its Formulation design and Evaluation.
- Impact of Genomics on the pharmaceutical industry with reference to new gene based therapy for diabetes.
- Market potential for Rofecoxib vis-à-vis Celecoxib and formulation and evaluation of Rofecoxib gels.
- Knowledge of anti-oxidants with reference to Alphalipoic acid among Medical Practitioners in Bangalore city.
- Prescription audit for a pharmaceutical company (Micro Lab Ltd.) with respect to

selected therapeutic segments.

- User profile and market analysis of Tramadol.
- Assessment of market demand for Calcium with Vitamin D in liquid dosage form.
- Determination of market demand for Ambroxal.

Publications:

Patent:

Complete specifications have been filed for “A vesicular drug delivery system for Antiretroviral (AIDS) therapy.

International Journals:

1. “Pharmacokinetic profile of a new matrix type transdermal delivery system – Diclofenac diethyl ammonium patch” in the American Pharmaceutical Journal “Drug Development and Industrial Pharmacy”, Issue 25(5), 1999, 697-702.
2. “Design and development of matrix diffusion controlled transdermal patches of Verapamil hydrochloride” published in the Journal “Drug Development and Industrial Pharmacy”, Vol.29, No. 5, and 2003, pp.495-503.
3. “Pharmacokinetic Profile of a New Matrix Type Transdermal Drug Delivery System - The Ketorolac Tromethamine Patch” published in the Journal of Pharmacy and Pharmacology, 1999, 51 (Supplement) pp.190.
4. “Dual Polymer Controlled Mini Modified Release Gliclazide Tablets” published in the Canadian Journal of Pharmacy, June 2004
5. “Design and Evaluation of Carbopol-940P-Methyl Cellulose mucoadhesive films for buccal delivery published in the Canadian Journal of Pharmacy, June 2004.
6. “Site specific oral controlled release metformin tablets – development, invitro, ex vivo and in vivo evaluation.” accepted for publication in DIE PHARMAZIE, November 2006.
7. “Development Of Extended Zero-Order Release Gliclazide Tablets By Central Composite Design' published in Drug Development and Industrial Pharmacy, March 2007.
8. “Biodegradable poly(sebacic acid-co-ricinoleic ester anhydride) Tamoxifen Citrate implant”, Journal of Applied Polymer science, 2007.,
9. “Formulation Development and *in vivo* characterization of solubility enhanced Gliclazide tablets., Current Trends in Biotechnology and Pharmacy, Vol 2 (#), 436-461,2008.
10. “Lamivudine liposomes for transdermal delivery – Formulation, Characterization, Stability and *In Vitro* Evaluation”, International Journal of Pharmaceutical Sciences and Nanotechnology, Volume 1, Issue 4, Jan-March 2009.

11. HSV infections in AIDS patients: need for awareness!!!'International Journal of PharmTech Research .Vol.1,No.1,pp 101-110, Jan – March 2009
12. Formulation and optimization of polymeric Nano drug delivery system of acyclovir using 3²Full factorial design, International Journal of PharmTech Research Vol.1, No.3, pp 644-653 , July-Sept 2009.
13. Importance of novel drug delivery systems in herbal medicines, Pharmacog reviews, 2010.

National Journals:

1. Development and Evaluation of Transdermal patches of Ketorolac tromethamine using pressure sensitive adhesives” in the Journal “Eastern Pharmacist”, Vol. XLI No.485 May, 1998.
2. Evaluation of Marketed products of Clotrimazole” “Indian Journal of Pharmaceutical Sciences”, March-April 1999, 113-115
3. A mathematical model to determine feasibility of Drug Delivery through transdermal route” in Indian Journal of Pharmaceutical Sciences issue-Jan/Feb 2000, pp 64-67.
4. Development and Pharmacodynamic evaluation of Transdermal Patches of Diclofenac Diethyl ammonium using acrylic based pressure sensitive adhesives” in the Journal “The Antiseptic”, August, 2000, Vol97 No.8 pp 273-276.
5. Pharma industry: Past, Present and Future” in Express Pharma Pulse, Vol. 7, No.1, dated 23rd November 2000, pp.26.
6. Nutraceutical Antioxidants – an Overview” in Indian Journal of Pharmaceutical Education, Vol.36, No.1, Jan-Mar 2002, pp.3-8.
7. Formulation and evaluation of Povidone-Iodine preparations” in the Journal “The Antiseptic”, January 2002, Vol.99, No.1, pp.29-30.
8. Impact of Genomics on the Pharmaceutical Industry”, in Express Pharma Pulse, vol.9, No.4, 2002, pp. 2-3.
9. The Role of foods during medication" in the Journal PharmaLink- Journal of Pharmacy Profession, January 2003, Vol.7, No.1, pp. 2-6. As the main article.
10. The article entitled "The Role of foods during medication" was reproduced by the Editor in the Journal "Pharma Times", Vol.25, No.4, 2003, pp.19-21
11. Cold Chain Management” in the Journal “Pharma Times’, Issue 6, Volume 35, June 2003, pp.15-19.
12. Design and Evaluation of Rofecoxib Gels”, The Antiseptic, Vol.100, No.8, August 2003, pp.283-285.
13. A Novel technique for the preparation of mouth dissolving tablets of Domperidone”, Indian Drugs, 40 (9) September 2003, pp.544-546.
14. A review of Cold Chain Management systems”, Indian Journal of Hospital Pharmacy, Vol XL, No.4, July-August 2003, pp.133-138.

15. Preformulation Studies on Celecoxib with a view to improve its bioavailability” published in “Indian Journal of Pharmaceutical Sciences”, September-October, 2003, pp.542-545.
- 16 Development of an Alginate based aqueous film coating formula for tablets”, published in “Indian Journal of Pharmaceutical Sciences”, January- February 2004, pp.125-128.
17. The role of Foods during Medication” has been reproduced from Pharma Times in the journal “Pharma World – India’s International Pharmaceutical Journal” Vol.2, Issue 5, Sep-Oct 2003, pp.19 – 22.
18. COX-2 Inhibitors: Heralding a New Era “, published in the journal “The Antiseptic -A Monthly journal of Medicine and Surgery” Vol.101, N.10, October 2004, pp.410- 414.
19. Plant based medications for Parkinsonism” published in the journal “Pharma Times”, Vol. 36, December 2004, pp.41-45
20. Studies on Behavioral characteristics of selected aqueous polymeric solutions in presence of Metoprolol tartrate”, accepted for publication in the Journal “International journal of Pharmaceutical Excipients.
21. A sensitive reversed phase HPLC method for the determination of Tamoxifen Citrate”, Published in Indian Drugs, 41(11), November 2005 Issue, pp.767-769
22. An insight into promising drugs for the future, IPC Issue of the The Pharma Review, December 2005 – Volume 4 Number 19, pp. 64-68.
23. Methylcobalamin – The most preferred Vitamin B12”, published in “The Antiseptic”, Vol 103, No 2, Feb 2006, pp. 83-87.
24. Antiretrovirals: Need for effective drug delivery – Review” published in the Indian Journal of Pharmaceutical Sciences – Jan-Feb 2006 issue.
25. Orodispersible Fluconazole Tablets – Preparation and Evaluation published in Indian Drugs, 43(7), July 2006 Issue, pp.548-552.
26. Development of a Launch strategy for a new herbal based preparation for Parkinsonism” published in Indian Journal of Pharmaceutical Education and Research – Jan 2007 issue.
27. “Determination of Tamoxifen and its Metabolites in Rat Plasma by a sensitive simple isocratic HPLC method” published in Indian Drugs, 44(2), February 2007 Issue, pp.103-107.
28. “Packaging solutions to the changing pharma market needs”, published in Pharma Times, Vol.39, No.8, August 2007 issue, pp.29-34.
29. Radio Frequency Identification (RFID) – A Technical Remedy for Counterfeiting in Pharma Industries, published in The Pharma Review, June 2008 issue, pp.85-88.
30. Residual Solvent analysis in liposomes by Gas Chromatography accepted for publication.
31. Perceptions of Consumers about Pharmacists – Report of the results of a Market Research conducted amongst consumers in Bangalore and Delhi, published in Pharma Times, Vol 41, No.9, September 2009, pp.15-18.

32. "Site-specific oral controlled release metformin tablets - development, in vitro, ex vivo and in vivo evaluation" accepted for publication in INPHARM – Internet Journal of Pharmacology, 2010, volume 8, Number 1.

Research Papers Presented:

International Conferences:

1. "Dual Polymer Controlled Mini Modified Release Gliclazide Tablets" presented in the Canadian Society for Pharmaceutical Sciences (CSPS) – 7th Annual Symposium held during 9th to 12th June 2004 in Vancouver, British Columbia, Canada.
2. "Design and Evaluation of Carbopol-940P-Methyl Cellulose mucoadhesive films for buccal delivery" presented in the Canadian Society for Pharmaceutical Sciences (CSPS) – 7th Annual Symposium held during 9th to 12th June 2004 in Vancouver, British Columbia, Canada.
3. "Pharmacokinetic Profile Of A New Matrix Type Transdermal Drug Delivery System- The Ketorolac Tromethamine Patch" has been presented in the 136th British Pharmaceutical Conference, held during 13th to 17th September 1999 in Cardiff, United Kingdom.
4. "Membrane Moderated Transdermal Systems Of Nicotine- Development And Evaluation" was accepted for paper presentation in the 7th International Conference in Perspectives in Percutaneous Penetration held during April 25–29, 2000 at La Grande Motte, France.
5. "Design and Evaluation of Carbopol pectin mucoadhesive films for Buccal Delivery" accepted for poster presentation in "Perspectives in Percutaneous Penetration", 9th International Conference, April 2004 at La Grande Motte, France.
6. "Polymeric films for Mucoadhesion", presented in "International Conference on Optoelectronic Materials and Thin Films for Advanced Technology (OMTAT-2005) held during October 24-27, 2005 in Kochi.
7. "Design and Evaluation of Buccoadhesive Tablets for Oral Candida Infections", & "Polymeric Buccal Films for the Treatment of Oral Candidiasis", were presented at 1st Indo-Japanese International Conference on Advances in Pharmaceutical Research and Technology held at Mumbai, India in November 25-29, 2005.

National Conferences:

1. Research papers presented in the 59th Session of Indian Pharmaceutical conference held in Varanasi, December, 2007.
 - a) Optimisation of Stavudine liposomes for transdermal delivery
 - b) Medical Representative : Marketer or Educator – A study
2. Research papers presented in the 58th Session of Indian Pharmaceutical conference held in Mumbai, December, 2006.

- a) “Pharmacokinetic evaluation of laminated buccal discs of Metoprolol tartrate in rabbits”
 - b) “Lamivudine liposomes for transdermal drug delivery”
3. Research papers presented at the 11th APTI Annual National Convention at Bangalore during 1st to 3rd September 2006.
 - a. Formulation and Characterization of Lamivudine Liposomes
 - b. Design and Evaluation of Laminated Buccoadhesive Films for Systemic Action
 - c. Design and Evaluation of Mucoadhesive Bilayered Tablets for Drug Delivery through Buccal Mucosa
 - d. Local Drug Delivery Implants for Solid Tumors In-vitro Characterization
 - e. Rapid Disintegrating Tablet of Rosiglitazone Maleate
 4. “Transdermal Potential of Lamivudine – An Antiretroviral” presented at 57th Indian Pharmaceutical Congress, held at Hyderabad during 2nd – 4th December 2005.
 5. Research paper entitled “Transdermal Potential of Antiretrovirals” presented at 10th APTI Annual National Convention at Nagpur during 17th and 18th 2005
 6. Research papers presented in the 56th session of Indian Pharmaceutical conference held in Kolkata, December 2004.
 - a. Design and evaluation of polyvinylpyrrolidone-pectin mucoadhesive films for buccal drug delivery
 - b. Development and Evaluation of biodegradable Paclitaxel implants for local drug delivery
 - c. Controlled Release coated mucoadhesive metformin tablets
 - d. A novel technique for the preparation of fast dissolving tablets of fluconazole
 7. Research papers presented in the International conference organized by Association of Pharmaceutical Teachers of India held in Vishakapatnam, October 2004.
 - a. Formulation and Evaluation of Mucoadhesive buccal films of Carbopol-Pectin for systemic drug delivery
 - b. Solubility enhanced Gliclazide in controlled released tablets.
 - c. Preparation and characterization of biodegradable polycaprolactone implants
 8. Research papers presented in the 54th session of Indian Pharmaceutical conference held in Poona, December 2002.
 - a. A novel technique to prepare fast dissolving tablets of Domperidone.
 - b. A successful Professional Service Representative – contributing factors.
 - c. Awareness of Pharmaceuticals among the nursing community.
 - d. Cold chain management

- e. Determination of market potential for fixed dose combinations of Omeprazole and Domperidone in the treatment of dyspepsia.
9. Research papers in the 52nd session of Indian Pharmaceutical conference held in Hyderabad, December 2000.
 - a. Dosage forms of Meloxicam – approaches to improve Bioavailability”.
 - b. Bioadhesive polymers for controlled release of selected antiulcer drug -Famotidine”.
10. A recipe for making Dynamic and Versatile Managers”, in the 51st session of Indian Pharmaceutical conference held at Indore, December 1999
11. Formulation and development of transdermal films of Diltiazem Hydrochloride” in the 50th session of Indian Pharmaceutical conference held in Bombay, India during December, 1998.
12. Enhanced percutaneous Permeation of Ketorolac tromethamine from adhesive Transdermal patches by relatively newer techniques” in the Oral Session of the 49th Indian Pharmaceutical Congress held in Tiruvanantapuram, India in December 1997.
13. Scientific paper in Pharmaceutical Technology presented in the Poster Session at the 49th Indian Pharmaceutical Congress, December 1997.
14. Paper on educational reforms presented in the Poster Session of the 2nd National Convention of Association of Pharmacy Teachers of India in Bangalore held from 1st to 2nd March 1997.
15. Design and fabrication of Transdermal diffusion cell for the in-vitro measurement of the skin permeation” in the Poster Session of the 17th All India Conference of Indian Pharmaceutical Graduates Association, 1997 held in Madurai, India.
16. Enhanced Percutaneous Permeation of Diclofenac diethyl Ammonium from adhesive Transdermal patches by relatively newer techniques” in the Oral Session of the 48th India Pharmaceutical Congress held in Madras in December 1996.
17. Ketorolac Tromethamine transdermal Dosage Form-Influence of surfactants on the penetration of the Drug” in “Recent Trends in Pharmaceutical Sciences” held at Ootacamund, India in February 1995.
18. Papers presented in scientific session of National convention of Association of Pharmacy teachers of India in Mysore, India held on 1st and 2nd October 1995 in the following topics:
 - a. Examination system – A need for a change for better.
 - b. Innovative teaching techniques for better education.
19. Scientific papers presented in the Oral Session at the 47th Indian Pharmaceutical Congress held at Visakhapatnam, India from 27th to 29th December 1995 viz.
 - a. Design and Development of an Adhesive Transdermal Drug Delivery system of Ketorolac tromethamine.
 - b. Newer concepts in Curriculum Development.
20. A scientific Paper was accepted for poster presentation in the 46th Indian pharmaceutical Congress in December 1994 held at Chandigarh.

Administrative skills:

Workshops/Seminars organized:

1. 15 day “Continuing Education Program” for Pharmacy Teachers held at Al-Ameen college of Pharmacy in November 1999.
2. “Pharmaceutical Engineering Work shop”, for Pharmacy Teachers held at Al-Ameen college of Pharmacy in August 2000.
3. “Training of Teachers” Workshop for Pharmacy Teachers held at Al-Ameen College of Pharmacy, October 2002.
4. Workshop on “Environmental Management in the Pharmaceutical Industry” for Pharmacy students and delegates from pharmaceutical industry held at Al-Ameen college of Pharmacy, 27th May 2004.

Co-Chairman of the Registration Committee for 11th Annual Convention of Association of Pharmaceutical Teachers of India held in Bangalore, 2006

Co-Chairman of the Registration Committee for 11th Annual Convention of Association of Pharmaceutical Teachers of India held in Bangalore, 2006

Judge of Indian Pharmaceutical Association for evaluating the scientific papers presented in Indian Pharmaceutical - Scientific Sessions.

Guest lectures delivered:

1. A lecture on the following topics in the Pharmaceutical Engineering workshop held at Al-Ameen College of Pharmacy in August, 2000:
 - a) Drying – Rate of Drying Curves.
 - b) Mixing – Efficiency of mixing when the propeller blade is introduced in different positions.
 - c) “Transdermal Drug Delivery – An overview” in the AICTE sponsored quality improvement programme conducted at KLE College of Pharmacy, Belgaum on 1.3.2001.
2. “Controlled Drug Delivery – Transdermal Systems” in the National symposium on Innovations in New Drug Delivery Systems organized by Al-Ameen College of Pharmacy and sponsored by AICTE.
3. “Liposomes and Niosomes – the Drug Delivery systems of the future” in the AICTE sponsored quality improvement program conducted a KLE college of Pharmacy, Belgaum on 8.4.2002.
4. “Targeted Drug Delivery – Mechanistics and Carriers” a Guest Lecture delivered in Government College of Pharmacy, Bangalore on 20.07.03.
5. “Unit Operations (selected) in Pharmaceutical Industry”, a series of lectures delivered for Medical Education Research Centre – Pharmacy Division for development into multimedia teaching programs to aid in teaching pharmacy students in Hyderabad from 6.12.07 to 8.12.07.
6. “Long and Short Essay Type Questions”, a presentation delivered in “Training of Teachers

workshop” held at Al-Ameen college of Pharmacy, Bangalore from 16.7.09 to 18.7.09.

8. Resource person for Staff Development Programme on Recent Advances in Novel Drug Delivery Systems organized by KMCH college of Pharmacy, Coimbatore. Topic of presentation “ Nanotechnology derived Drug Delivery systems – Medicines for the future generation”.

Professional Memberships:

- Life Member of Indian Society for Technical Education.
- Life Member of Indian Pharmaceutical Association.
- Life Member of Association of Pharmacy teachers of India.

Karnataka State Pharmacy Council - Registered Pharmacist No: 6786 dated 11.01.85