### Dr. RAHUL SHUKLA

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**Research Interest:** Pharmaceutics, Nanomedicine, Particle Engineering, Bionanomaterials, Polymeric nanoparticles, nanocrystals, for various therapeutic applications such as Neurodegenerative disorders, cancer, glioma's and osteoarthritis

# **Academic Achievements/Awards/Experiences:**

- Listed in Stanford University **Top 2% Scientist** List released on 04<sup>th</sup> Oct'2023 in Pharmaceutical Sciences Worldwide.
- Got selected for **SERB International Research Experience (SIRE)** Fellow for the year, 2022-2023 for 4 months fellowship at School of Pharmacy and Biomedical Sciences, University of Central Lancashire, United Kingdom.
- Got **D.S Kothari Post-Doctoral Fellowship in Medical Sciences** in UIPS, Panjab University
- Got CSIR-GATE fellowship, during PhD from CSIR-Central Drug Research Institute, Lucknow. Qualified Graduate Aptitude Test in Engineering (GATE-2006) in Pharmaceutical Sciences, conducted by I.I.T Kharagpur, with an All-India Rank-6 with 99.96 percentile.
- Got DST & CICS travel Grant to present paper Paper Title "A Lymphotropic Delivery System for Antifilarial Drug: Diethylcarbamazine Citrateheld at Amsterdam, Netherland 15-17 July 2012.
- Got CICS travel Grant -Invited talk on "Doxycycline loaded nanoparticles of PLGA for controlled delivery and effective therapy against lymphatic filariasis", held at ISNSC 2016, **Brisbane**, **Australia**.
- worked in Formulation Research & Development at Dr Reddy's' Lab Ltd, Hyderabad.

#### **Education:**

### **COURSE** UNIVERSITY

Ph. D J.N.U, New Delhi, CSIR-CDRI, Lucknow

M. Pharm. (Pharmaceutics) IIT, (BHU), Varanasi

B. Pharm. Jamia Hamdard, New Delhi

### Publications in Refereed International Journals:

- 1) Decitabine enclosed biotin-zein conjugated nanoparticles: Synthesis, characterization, in vitro and in vivo evaluation, Akshada mhaske, Jasleen kaur, Saba naqvi\*, **Rahul Shukla**\*, Nanomedicine, 2024. (**I F: 5.1**).
- 2) Revolutionizing Periodontic Care: Nano Dentistry's Impact on Inflammation Management, Akanksha Chaturvedi, Garima Gupta, Prashant Kesharwani\* Rahul Shukla\*, Journal of Drug Delivery Science and Technology, 2024. (IF: 5.0)

- 3) Recent advancements in microspheres mediated targeted delivery for therapeutic interventions in osteoarthritis, Ayush Kumar, Rahul Shukla\*, Journal of Microencapsulation, 2024. (I F: 3.9).
- 4) Nanoengineered tools in the treatment of Diabetic wounds: a review on next generation multidimensional therapeutic approaches, Jhansi Sanku, Kailash Ahirwar, K K Pinapati, **Rahul Shukla\***, Nidhi Srivastava\*, BioNanoScience, 2024. (**I F: 3.1**).
- 5) Manoeuvring the innovative drug delivery systems for veterinary therapeutics: Present day demand, Jayesh S. Unde, Kailash Ahirwar, Akhilesh Kumar, Saad Ali Alshehri, Shadma Wahab, Prashant Kesharwani\*, Rahul Shukla\*, European Polymer Journal, (I.F:6).
- 6) Gold Nanoparticles as a Tool to Detect Biomarkers in Osteoarthritis: New Insights, Atul Mourya, Shristi Arya, Ayush Singh, Gopal Bajad, Soham Loharkar, Shubhra, Pawan Devangan, Neelesh Kumar Mehra, **Rahul Shukla**, Ramesh Chandra & Jitender Madan\*, Indian Journal of Microbiology, 2024, (**I F: 2.1**).
- 7) Formulation and Characterization of Silibinin Entrapped Nano-Liquid Crystal for Activity against Aβ1-42 Neurotoxicity in In-Vivo Model, AAPS PharmSciTech, Ajit Singh, Debarati Rakshit, Ankit Kumar, Awanish Mishra and Rahul Shukla\*,2024, (I F: 3.3).
- 8) Leveraging Artificial Intelligence for Synergies in Drug Discovery: From Computers to Clinics, Priyanka Arora, Manaswini Behera, Shubhini A. Saraf and Rahul Shukla, Current Pharmaceutical Design, 2024, (I. F: 3.1).
- 9) Tissue regeneration properties of hydrogels derived from biological macromolecules: A review, Payal Kesharwani, Amit Alexander, **Rahul Shukla**, Smita Jain, Akansha Bisht, Kajal Kumari, Kanika Verma, Swapnil Sharma, International Journal of Biological Macromolecules, 2024, (IF: 8.2)
- 10) Microneedles along with Conventional Therapies: An In-depth Observational Review in Alopecia Areata Treatment, Priyanka Arora, **Rahul Shukla**, Journal of Drug Delivery Science and Technology, 2024, (**IF: 5**)
- 11) Harnessing the potential of nanoengineered siRNAs carriers for target responsive glioma therapy: Recent progress and future opportunities, Kailash Ahirwar, Ankit Kumar, Nidhi Srivastava, Shubhini A Saraf, Rahul Shukla, International Journal of Biological Macromolecules, 2024, (IF: 8.2)
- 12) Optimization, Characterization and In-Vitro Cellular Uptake of Donepezil-Loaded NanoCrystVesicles, Ashish Dhiman, Reetika Tandon, Kailash Ahirwar, Mayank Handa, Nidhi Srivastava & Rahul Shukla\*, Journal of Cluster Science, 2024, (I F: 2.8)
- 13) Receptor assisted nanotherapeutics for overcoming the blood brain barrier, A Mhashke, S. Shukla, K. Ahirwar, Kamalinder K. Singh\*, **Rahul Shukla**\*, Molecular Neurobiology, 2024, (**I F: 5.1**)
- 14) Nanocrystals: a multifaceted regimen for dermatological ailments, V. Giradkar, A. Mhashke, **Rahul Shukla\***, Particle and Particle Systems Characterization, 2024. (**I F: 3.1**)
- 15) State-of-the-art drug delivery system to target the lymphatics, Omkar T. Khaire, Akshada Mhaske, Aprameya Ganesh Prasad, Waleed H. Almalki, Nidhi Srivastava, Prashant Kesharwani & Rahul Shukla\*, Journal of Drug Targeting, 2024, (IF: 5.1)
- 16) Drug nanocrystals: A delivery channel for antiviral therapies, Akanksha Chaturvedi S. Sharma, **Rahul Shukla\***, AAPS PharmSciTech,2024, **(I F: 3.3)**
- 17) Role of NLRP3 Inflammasome in Stroke Pathobiology: Current Therapeutic Avenues and Future Perspective, K Panbhare, R Pandey, C Chauhan, A Sinha, **Rahul Shukla**, RK Kaundal ACS Chemical Neuroscience, 2023, (**I F: 5.78**)

- 18) Nano-Mediated Molecular Targeting in Diagnosis and Mitigation of Wilson Disease, Akanksha Chaturvedi,S. Sharma, Rahul Shukla, Molecular Neurobiology,2023, (I F: 5.1)
- 19) Systematic optimization, characterization of Mycophenolic acid loaded nanostructured lipid carrier embedded nanogel for improved permeation and in vivo anti psoriatic activity, Payal Kesharwani, Akansha Bisht, Mayank Handa, Rahul Shukla, Mahendra Kesari, Shailendra Paliwal, Sarvesh Paliwal, Swapnil Sharma, Journal of Drug Delivery Science and Technology, 2023, (IF: 5.06)
- 20) Combining donepezil and memantine via mannosylated PLGA nanoparticles for intranasal delivery: Characterization and preclinical studies, M.Handa, S. N. Sanap, R S Bhatta, G. Patil, S. Ghose, D P Singh, Rahul Shukla\* Biomaterials Advances, 2023, (IF: 8.0).
- 21) ApoE3 Anchored Stealth-Liposomal Delivery of Rivastigmine for Brain Delivery: Formulation, Characterization and in vivo Pharmacokinetic Evaluation, Pooja Khairnar, Ajit Singh, Kailash Ahirwar, Rahul Shukla\*, AAPS PharmSciTech, 2023, (IF: 3.3).
- 22) Clofazimine nanoclusters show high efficacy in experimental TB with amelioration in paradoxical lung inflammation, K. Jadhav, A. Jhilta, R. Singh, E. Ray, N. Sharma, **Rahul Shukla**, A K Singh, R. K. Verma, Biomaterials Advances, 2023, (**I F: 8.0**).
- 23) Simultaneous Intranasal Codelivery of Donepezil and Memantine in nano-colloidal Carrier: Optimization Pharmacokinetics and Pharmacodynamics studies, Mayank Handa, S. Sanap, R S Bhatta, Gajanan Patil, Rajendra Palkhade, D P Singh, Rahul Shukla\*, Molecular Pharmaceutics, ACS, 2023, (IF: 4.9).
- 24) Nanovesicular-mediated intranasal drug therapy for neurodegenerative disease, Shalu Singh, Rahul Shukla AAPS PharmSciTech, 2023, (IF: 3.3).
- 25) Vincristine based Nanoformulations: A Preclinical and Clinical Studies Overview, Rahul Shukla\*, Ajit Singh and Kamalinder K. Singh\*, Drug Delivery and Translational Research, 2023, (IF: 5.4).
- 26) Vitamin E Modified Polyamidoamine Dendrimer for Piperine Delivery to Alleviate Aβ1–42 Induced Neurotoxicity in Balb/c Mice Model, A Singh, D Rakshit, A Kumar, A Mishra, **R. Shukla\***, Journal of Biomaterials Science, Polymer Edition, 1-18,2023, (**I F: 3.68**).
- 27) Hyaluronic acid-functionalized lipoplexes and polyplexes as emerging nanocarriers for receptor-targeted cancer therapy, J. Chandra, N. Molugulu, S. Annadurai, S. Wahab, R. Karwasra, S. Singh, R. Shukla, P. Kesharwani, Environmental Research, 2023, (IF: 8.43)
- 28) Therapeutic potential of Microneedles based delivery systems for the management of Atopic dermatitis, Shalini Shukla, Kalpana Balu Mamale, R K Kaundal and Rahul Shukla, Journal of Drug Delivery Science and Technology, 2023, (IF: 5.06)
- 29) New Generation smart drug delivery systems for Rheumatoid arthritis, Current Pharmaceutical Design, Raghuraj Singh, K. Jadhav, K. Vaghasiya, E. Ray, Rahul Shukla and R. K. Verma, 2023 (I.F=3.33)
- 30) Transferrin decorated PLGA encumbered Moxifloxacin nanoparticles and in vitro cellular studies, Gayathri Reddy A., M. Handa, D.Garabadu, R. Kumar, P. K. Kushawaha, Rahul Shukla\*, Drug Development and Industrial Pharmacy,2023, (Impact Factor: 3.72)
- 31) Harnessing the personalized tailored medicines to digital-based data enriched edible pharmaceuticals, M.Handa, R. K. Kaundel, R. K. Verma, M. Rahman, R. Shukla\*, S. Beg\*, Drug Discovery Today, 2023, (Impact Factor: 8.369)

- 32) The microbiome-gut-brain axis in Epilepsy: Pharmacotherapeutic target from bench evidence for potential bedside applications, Kundu S, Nayak S, Rakshit D, Singh T, Shukla R, Khatri DK, Awanish Mishra, European Journal of Neurology,2023, (Impact Factor: 6.28)
- 33) New insights on mode of action of vasorelaxant activity of simvastatin, K. Verma, **Rahul Shukla**, J. Dwivedi, S. Paliwal & S. Sharma, Inflammopharmacology,2023. (**Impact Factor: 5.01**)
- 34) Nanotheranostic: The futuristic therapy for copper mediated neurological sequelae, A Mhaske, S Sharma, **Rahul Shukla\***, Journal of Drug Delivery Science and Technology, 2023, (**Impact Factor: 5.1**)
- 35) Cedrus deodara (Roxb. ex D. Don) G. Don bark fraction ameliorates metabolic, endocrine, and ovarian dynamics in rats experiencing polycystic ovarian syndrome, A Bisht, R Gururani, S Jain, **Rahul Shukla**, J Dwivedi, S Sharma, Journal of Ethnopharmacology, 2023, (Impact Factor: 5.19)
- 36) Recent nanoengineered diagnostic and therapeutic advancements in management of Sepsis, Mukesh Soni, Mayank Handa, Kamalinder K\*. Singh, Rahul Shukla\*, Journal of Controlled Release, 2022, (Impact Factor: 11.46)
- 37) Recent pharmaceutical engineered approaches as prophylaxis and management of frostbite, Parth Patel, M. Handa, K. Jain, **Rahul Shukla\***, Journal of Drug Delivery Science and Technology, 2022, (**Impact Factor: 5.1**)
- 38) Fabrication of TPGS-Grafted Polyamidoamine Dendrimer for Enhanced Piperine Brain Delivery and Pharmacokinetics, Ajit Singh, Akshada Mhaske, **Rahul Shukla\***, AAPS PharmSciTech, 2022, (**Impact Factor: 4.02**)
- 39) Bilayer fixed-dose combination tablet for curcumin microparticles and piroxicam and in vitro evaluation, M Handa K Kumar, D Garabadu, P K Kushawaha & Rahul Shukla\*, Therapeutic Delivery,2023
- 40) Recent pharmaceutical engineered trends as theranostics for Japanese Encephalitis, Process Biochemistry, A. Mhaske, S. Singh, P.Kesharwani Rahul Shukla\*, 2022, Impact Factor: 4.88)
- 41) Immunoliposomes as an emerging nanocarrier for breast cancer therapy, N Parveen, M AS Abourehab, **Rahul Shukla**, PV Thanikachalam, G K Jain, P. Kesharwani, European Polymer Journal, 2022, (**Impact Factor: 5.54**)
- 42) Recent advances in multifunctional dendrimer-based nanoprobes for breast cancer theranostics, P. Kesharwani, R. Chadar, **Rahul Shukla**, G. K. Jain, G. Aggarwal, M. A. S. Abourehab, A. Sahebkar, Journal of Biomaterials Science, Polymer Edition, 2022, (Impact Factor: 3.68)
- 43) Retinoid Nanoparticulates: Approachable Gateway for Acne Treatment, Judy Lalrengpuii, K. Raza, Awanish Mishra, **Rahul Shukla\***, Health Sciences Review, 2022.
- 44) Lymphatic targeting for therapeutic application using nanoparticulate systems, Nidhi Singh,M. Handa,V. Singh,P Kesharwani, **Rahul Shukla\***,Journal of Drug Targeting,2022, (**Impact Factor: 5.1**)
- 45) Active pharmaceutical ingredients (API) into Ionic liquids: An effective approach for API, M. Handa, **Rahul Shukla\***, H.Almalki, W., Alghamdi, S., Alharbi, K. S., **Rahul Shukla \***, & Beg\*, S., Drug Discovery Today,2022, (**Impact Factor: 8.369**)
- 46) Wearable Smart devices in cancer diagnosis and remote clinical trial monitoring, Mayank Handa, S. Beg, M. Rahman, Rahul Shukla\*, W.H. Almaki, O. Afzal, A. S A Altamimi, Drug Discovery Today, 2022, (Impact Factor: 8.369)

- 47) Recent advances in nanocrystals heralding greater potential in targeted brain delivery, S Mule, P Khairnar, Rahul Shukla\*, Particle Systems Characterization, 2022. (Impact Factor: 3.46)
- 48) Rosemary oil low energy nanoemulsion: Optimization, μrheology, in silico, in vitro and Ex vivo characterization, N Vasdev, M Handa, P Kesharwani, **Rahul Shukla\***, Journal of Biomaterials Science Polymer Edition, 2022, (**I Factor: 3.68**)
- 49) Potential of particle size ≤15 nm for drug transportation to brain through olfactory region when delivered via nasal route, Mayank Handa, Ajit Singh, P. Kesharwani, Rahul Shukla\*, Health Sciences Review,2022
- 50) Formulation and development TPGS nanoengineered polyammidoamine dendrimer for treatment of neurodegenerative disease, Ajit Singh, R.R. Ujjwal, S. Naqvi, S. Tiwari, P. Kesharwani, **Rahul Shukla\***, Journal of Drug Targeting, 2022, (**I F: 5.1**)
- 51) Silymarin Encapsulated Xanthan Gum Stabilized Selenium Nanocarriers for Enhanced Activity against Amyloid Fibrils Cytotoxicity, V Saini, A Singh, Rahul Shukla\*, K. Jain, A K Yadav, AAPS PharmSciTech, 2022, (Impact Factor: 3.3)
- 52) Recent trends of natural based therapeutics for mitochondria targeting in Alzheimer's disease, Ashish Dhiman, M. Handa, M. Ruwali, P Kesharwani, Rahul Shukla\*, Mitochondrion, 2022, (Impact Factor: 4.53)
- 53) Recent advances in lipid-engineered multifunctional nanophytomedicines for cancer targeting, Mayank Handa, Sarwar Beg, **Rahul Shukla\***, Md Abul Barkat, Hani Choudhry, Kamalinder Singh, Journal of Controlled Release, Volume 340, 10, Pages 48-59., 2021, (**Impact Factor: 11.46**)
- 54) Stimuli-responsive Polymeric nanosystems for therapeutic applications, M. Handa, A Singh, SJS Flora, **Rahul Shukla\***, Current Pharmaceutical Design, 2022, (I F: 3.3)
- 55) Recent advances in nanotechnology based combination drug therapy for skin cancer, Shweta Kumari,P K Choudhary, **Rahul Shukla**, P. Kesharwani,Journal of Biomaterials Science Polymer Edition,2022, (**Impact Factor: 3.75**)
- 56) Stimuli-Responsive Microneedles as a Transdermal Drug Delivery System: A Demand-Supply Strategy, B.H. Jaswanth Gowda, M G. Ahmed, Amirhossein Sahebkar, **Rahul Shukla**, P. Kesharwani, Biomacromolecules, 2022, (**Impact Factor:** 6.978)
- 57) Biocompatible Nanomaterials for burns, Mayank Handa, S K Maharana, Kamlesh Pal, Rahul Shukla\*, Current Pharmaceutical Biotechnology, 2022, (Impact Factor- 2.82)
- 58) Nanocrystals an approachable delivery system for anticancer therapeutics, Pooja Khairnar, M Handa, Rahul Shukla\*, Current Drug Metabolism, 2022 (I Factor- 3.40)
- 59) Box Behnken Design Optimized Silibinin loaded Nanoliquid crystal for brain targeting, Ajit Singh, A. Vaish, **Rahul Shukla\***, Chemistry and Physics of Lipids, 2022, (**Impact Factor: 3.57**)
- 60) Graphene quantum dots: Synthesis, optical properties and navigational applications against cancer, Vrushti Kansara, **Rahul Shukla**, SJS Flora, Sanjay Tiwari, Materials Today Communications, 2022, (**Impact Factor: 3.66**)
- 61) Recent highlights on Omicron as a new SARS-COVID-19 variant: Evolution, genetic mutation and future perspectives, P Khairnar, Mukesh Soni, M. Handa, P. Kesharwani, Rahul Shukla\*, Journal of Drug Targeting, 2022, (Impact Factor: 5.1)
- 62) Formulation and Optimization of Silymarin Encapsulated Binary Micelles for Enhanced Amyloid Disaggregation Activity, A. Singh, R R Ujjwal, Rahul K Verma, Rahul Shukla\*, Drug Development and Industrial Pharmacy, 2022, (I F: 3.72)
- 63) Therapeutic potential of nanoemulsions as feasible wagons for targeting Alzheimer's disease, Handa, M., Tiwari, S., Yadav, A. K., H. Almalki, W., Alghamdi, S., Alharbi, K. S., **Rahul Shukla** \*, & S. Beg\*, Drug Discovery Today, 2021, (**I F: 8.369**)

- 64) Nanotechnological approaches for targeting amyloid β aggregation with potential for Neurodegenerative disease therapy and diagnosis, **Rahul Shukla\***, A. Singh, M. Handa, S J S Flora, P. Kesharwani, Drug Discovery Today, 2021, (**Impact Factor: 8.369**)
- 65) Potential of nanoparticulate based delivery systems for effective management of alopecia. Mishra, P., Handa, M., Ujjwal, R. R., Singh, V., Kesharwani, P., & Shukla, R\*., Colloids and Surfaces B: Biointerfaces, 208, 112050,2021, (I F: 5.99)
- 66) Investigations on the role of edge activator upon structural transitions in Span vesicles, Rathod, S., Arya, S., **Shukla, R**., Ray, D., Aswal, V. K., Bahadur, P., & Tiwari, S., Colloids and Surfaces A,2021, (**Impact Factor: 5.5**)
- 67) Mobility of doxorubicin in TPGS micelles in response to sodium taurodeoxycholate incorporation: Analyses based on scattering and fluorescence studies, Jayant Sarolia, **Rahul Shukla**, Debes Ray, V K. Aswal, S. D. Choudhury, Pratap Bahadur Sanjay Tiwari, Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2021, (**Impact Factor: 5.5**)
- 68) Drug Repurposing strategies and key challenges for Covid-19 management, Shubham Mule1, Ajit Singh, Khaled Greish, Amirhossein Sahebkar, P. Kesharwani\*, Rahul Shukla\*, Journal of Drug Targeting, 2021, (Impact Factor: 5.1)
- 69) Stimuli-responsive Polymeric nanosystems for therapeutic applications, Mayank Handa, Ajit Singh, Ajit Singh, S.J.S. Flora, Rahul Shukla\*, Current Pharmaceutical Design, 2021, (Impact Factor: 3.33)
- 70) Epidemiology, virology and clinical aspects of hantavirus infections:an overview, Sima Singh, Arshid Numan, D. Sharma, **Rahul Shukla**, A. Alexander, Gaurav K. Jain, Farhan J. Ahmad and Prashant Kesharwani, International Journal of Environmental Health Research, 2021, (**Impact Factor: 4.5**)
- 71) PAMAM dendrimer as a talented multifunctional biomimetic nanocarrier for cancer diagnosis and therapy, Bhavya Surekha, Naga Sreenu Kommana, Sunil Kumar Dubey, A V Pavan Kumar, **Rahul Shukla**, P. Kesharwani, Colloids and Surfaces B,2021, (**Impact Factor: 5.99**)
- 72) Nanotherapeutics approaches for targeting alpha synuclien protein in the management of Parkinson disease, Singh, A., Maharana, S. K., **Shukla, R\***., & Kesharwani, P., Process Biochemistry, 110, 181–194,2021, (**Impact Factor: 4.88**)
- 73) Nanocarrier mediated autophagy an emerging trend for cancer therapy, Singh, A., Handa, M., Ruwali, M., Flora, S.J.S, **Shukla\***, **R**., & Kesharwani\*, P., Process Biochemistry, 2021, (**Impact Factor: 4.88**)
- 74) Quantum dot: Heralding a brighter future in neurodegenerative disorders, Singh, A., Mallika, T. N., Gorain, B., Yadav, A. K., Tiwari, S., S.J.S.Flora, **Shukla\***, **R**., & Kesharwani\*, P., Journal of Drug Delivery Science and Technology, 2021, (**I.F:5.06**)
- 75) Viral vectors as a promising nanotherapeutic approach against neurodegenerative disorders., Srivastava, V., Singh, A., Jain, G. K., Ahmad, F. J., Shukla, R\*., & Kesharwani, P., Process Biochemistry, 2021, (Impact Factor: 4.88)
- 76) Optimization of Surfactant and Co-Surfactant Aided Pine Oil Nanoemulsion by Isothermal Low-Energy Methods for Anticholinesterase Activity, Handa, M., Ujjwal, R. R., Vasdev, N., Flora, S.J.S., and **Shukla, R\***. ACS Omega, 6, 1, 559–568, 2021, (**Impact Factor: 4.1**)
- 77) Box-Benkhen Design Optimized TPGS Coated Bovine Serum Albumin Nanoparticles Loaded with Anastrozole, Kumar, A., Singh, A., Flora, S.J.S., **Shukla, R\***. Current Drug Delivery, 2020. (**Impact Factor: 3.75**)

- 78) Nanodiamonds: A Versatile Drug Delivery System in Recent Therapeutics Scenario, Yadav, A. K., Shukla, R., Flora, S.J.S., Critical Reviews<sup>TM</sup> in Therapeutic Drug Carrier Systems, (2020). (Impact Factor: 3.09)
- 79) Formulation and evaluation of gastro-retentive floating bilayer tablet for the treatment of hypertension, BalajiMaddiboyina, M. Hanumanaik, R. Krishna N.Vikas Jhawat, P. Rawat, A. Alam,Ahmed I.Foudahd Majed M.Alrobaian,**Rahul Shukla**,S Singh,P.Kesharwani,Heliyon, Volume 6, Issue 11, November 2020, (Impact Factor: 3.77)
- 80) Investigations of process parameters during dissolution studies of drug loaded 3D printed tablets, Part H: Journal of Engineering in Medicine, 2021,
- 81) 3D Printing Fabrication of Personalized Nanomedicine, Keerti Jain, **Rahul Shukla**, Awesh Yadav, R.R. Ujjwal and S.J.S. Flora, Nanomaterials, 2021, (**Impact Factor:** 5.7)
- 82) Silymarin Encapsulated Nanoliquid Crystals for Enhanced Activity against Beta Amyloid Induced Cytotoxicity, Ajit Singh, A. Kumar, R K. Verma, **Rahul Shukla\***, International Journal of Biological Macromolecules, Volume 149, 1198-1206, 2020. (**Impact Factor: 8.02**)
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- 84) Autophagy inducing inhalable Co-crystal formulation of Niclosamide-Nicotinamide for lung cancer therapy, Eupa Ray, K. Vaghasiya, A. Sharma, Rahul Shukla, Anil Kumar, Rahul K Verma, AAPS PharmSciTech (2020), (I.Factor: 4.02)
- 85) Role of flavonoids in neurodegenerative diseases: Limitations and future perspectives, Gagandeep Mann, Biplab Sikdar, Ashish Kumar, **Rahul Shukla**, Awanish Mishra, Current Topics in Medicinal Chemistry, 2020, (I.Factor: 3.57)
- 86) Insulin mediated novel therapies for the treatment of Alzheimer's disease, S K Dubey, K.K.Lakshmi, K V Krishna, Mukta Agrawal, Gautam Singhvi, R N Saha, Swarnlata Saraf, Shailendra Saraf, Rahul Shukla, ,A Alexander, Life Sciences, 2020, ,(I.Factor: 6.75)
- 87) Recent advances in self-assembled nanoparticles for drug delivery, T Varma Lanke, N. Singh, B. Gorain, H. Gorain, Murtaza Tambuwala, P. Kesharwani, Rahul Shukla\*, Current Drug Delivery, 2020, (Impact Factor: 3.75)
- 88) Azacitidine loaded PLGA nanoparticles and its dual release mechanism, Kanchan Kashyap, Mayank Handa, **Rahul Shukla**\*, Current Nanomedicine, 2020.
- 89) Drug delivery and targeting to the brain through nasal route: Mechanisms, Applications and Challenges, Kanchan Kashyap, **Rahul Shukla\***, Current Drug Delivery, Volume 16, Number 10, 2019, 887-901,2019, (**Impact Factor: 3.75**)
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- 91) Polycaprolactone based nano-carrier for co-administration of moxifloxacin and rutin and its in-vitro evaluation for sepsis, M. Handa, A.Sharma, Rahul K. Verma, **Rahul Shukla\***, Journal of Drug Delivery Science and Technology, 2019. (I.F=5.06)
- 92) Key Signaling Pathways Engaged in Cancer Management: Current Update, Sanjiv Singh and **Rahul Shukla**, Current Cancer Therapy Reviews, 16, 36-48, 2020.
- 93) Nanocrystals: An Overview of Fabrication, Characterization and Therapeutic Applications in Drug Delivery, Vishwas P. Pardhi, Tejesh Verma, S.J.S. Flora, H.

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- 95) Quality by Design (QbD)-enabled development of aceclofenac loaded-nano structured lipid carriers (NLCs): An improved dermatokinetic profile for inflammatory disorder(s). N. K. Garg, G. Sharma, B. Singh, P.Nirbhavane, R. K. Tyagi, **Rahul Shukla**, O.P. Katare, Int. Jou. of Pharmaceutics, 517 (2017) 413–431 (I. F: 6.51)
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- 97) Emerging trend in nano-engineered polyelectrolyte based surrogate carriers for delivery of bioactives. Shukla P, Gupta G, Singhodia D, Shukla R, et al. Expert opin Drug Deliv; 7(9):993-1011,2010. (Impact factor 8.12)
- 98) Ciprofloxacin surf-plexes in sub-micron emulsions: A novel approach to improve payload efficiency and antimicrobial efficacy, V. Jain, D Singodia, G K. Gupta, D Garg, G.B.S Keshava, **Rahul Shukla**, P. K. Shukla, and P R. Mishra, International Journal of Pharmaceutics, Vol. 409, 237–244, 2011 (I. Factor: 6.5)
- 99) Development of Nevirapine Loaded Novel Surfactant Free Polymeric Emulsion and Investigations for Its Suitability as Drug Delivery Vehicle.
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- Exploiting 4-sulphate N-acetyl galactosamine decorated gelatin nanoparticles for effective targeting to professional phagocytes in vitro and in vivo.
  P. Dwivedi, S. Kansal, M.Sharma, Rahul Shukla, A. Verma, P. Shukla, P. Tripathi, P. Gupta, D. Saini, K. Khandelwal, R. Verma, A. K. Dwivedi and P. R. Mishra Journal of Drug Targeting, 2012, (Impact Factor 5.1)
- 101) Microparticles of Diethylcarbamazine Citrate for the Treatment of Lymphatic Filariasis. **Rahul Shukla\***, J. Kumar, P. Dwivedi, P. Gatla and P.R. Mishra Asian Journal of Chemistry; Vol. 25, , 302-304, 2013.
- 102) Preparation and characterization of solid lipid nanoparticles of antimalarial drug Arteether for oral administration.P. Dwivedi, R. Khatik, K. Khandelwal, **Rahul Shukla**, S. K Paliwal, A. K Dwivedi, P R Mishra, Journal of Biomaterials and Tissue Engineering, Vol. 4, 1–5, 2014.
- 103) Formulation and characterization of Amphotericin B loaded nanostructured lipid carriers using microfluidizer, P. Tripathi, A.Verma, P. Dwivedi, D. Sharma, V. Kumar, **Rahul Shukla**, V. Teja Banala, G. Pandey, S. D. Pachauri and P R Mishra, Journal of Biomaterials and Tissue Engineering Vol. 4(3), 194-197), 2014.
- 104) Development of docetaxel nanocapsules for improving in vitro cytotoxicity and cellular uptake in MCF-7 cells, S K Singh, V. T. Banala, G. K. Gupta, A. Verma, **Rahul Shukla**, V K. Pawar, P. Tripathi, P.R Mishra, Drug Development and Industrial Pharmacy 2015, (Impact Factor 3.75)

### Patent & Copyrights:

- 1. Combinatorial Formulation for Solubilization of Poorly Water-Soluble Drugs & Method of Preparation Thereof. Dr. Rahul Shukla, Mr. Mayank Handa, Dr. S.J.S. Flora, Indian Patent No: 201911046999.
- 2. Pharmaceutical Compositions Of Montelukast For Enhancing Oral Bioavailability

- And Method Of Preparation Thereof, Dr. Rahul Shukla, Mr. Mayank Handa, Mr Nikhil Chauhan, Dr. S. J. S. Flora, Patent No: 201911042226.
- 3. Novel Composition of Zein Polymeric Nanoparticles and Method Of Preparation Thereof, Dr. Rahul Shukla, Mr. Mayank Handa, Mr Ajit Singh, Mr Abhas Saxena, Dr. S.J.S. Flora, Indian Patent No: 202011024072.
- 4. Coating Composition having Pathogen Deactivation Properties for 3-Ply Surgical-Mask and Method of Preparation Thereof,
  - Dr. Rahul Shukla, Dr Anoop Kumar, Dr. A K Yadav, Dr. S.J.S. Flora, Indian Patent No: 202011033702
- Natural Oil Based Herbal Sanitizer Hydrogel Composition and Method of Preparation Thereof, Dr. A K Yadav, Dr. Rahul Shukla, Dr Saba Naqvi, Dr. S.J.S. Flora, Indian Patent No: 202011033482
- 6. Novel Non-Aqueous Topical Anti-Inflammatory Drug Composition and Method of Preparation Thereof
  Dr Rahul Shukla, Gagandeep, Mayank Handa, Dr Awanish Mishra, Dr S.J.S. Flora,

Indian Patent No: 202111007442.

- 7. Novel Method of Preparation for Metallicnanoparticles and Product Thereof, Dr. Rewati Raman Ujjwal, Mr. Mayank Handa, Dr. Rahul Shukla, Dr. S.J.S. Flora, Indian Patent No: 202111009794.
- 8. Novel method for preparation of Vincristine loaded exosomes and their therapeutic Intervention Thereof Miss Reetika Tandon, Mr. Mayank Handa, Dr. Rahul Shukla, Dr. Nidhi Srivastava,

Indian Patent No: 202211065328.

- An Artemisinin Loaded Self Emulsifying Delivery Composition, Mr. Harsh, Dr. Pratima Tripathi, Dr. Rahul Shukla, Dr. Sandeep Chaudhary, Indian Patent No: 202311049238
- 10. A Herbal Green Toothpaste Composition for Diabetic Patients and Method Of Its preparation, Mallareddy Tejomayee, Rashi Rathore, Saurabh Pratap Singh Rathour, Kailash Ahirwar, Rahul Shukla, Nidhi Srivastava, Shubhini A. Saraf, Indian Patent No: 202411044017
- 11. Novel Manageable Herbal Microbicide formulation for the Deactivation of microflora Present in Toothbrush, Anjani Sihag, Kishore K. Pinapati, Kailash Ahirwar, Jyoti Mathur, Rahul Shukla, Nidhi Srivastava, Shubhini A. Saraf, Indian Patent No: 202411045126
- 1. **Copyright granted**: PharmSolWave Technology, Dr. Rahul Shukla, Mr. Mayank Handa, Dr. S.J.S. Flora, Diary No. 18327/2019-CO/L.

# **Project Awarded:**

- Awarded SERB International Research Experience (SIRE) for the year, 2022-2023 for fellowship at School of Pharmacy and Biomedical Sciences, University of Central Lancashire, United Kingdom.
- Got Awarded DST Science and Engineering Research Board (SERB) Startup Research Grant (SRG) LRP engineered nanolipidic carriers as potential therapeutics for brain targeting in Wilson's disease, File Number: SRG/2022/001285, 2 Years, 29.49 Lacs
- Awarded with NIPER Raebareli Innovation Grant (NIG) for 2 Years, entitled Organic Novel Dermal Patch (ONDP) and Herbal Powder(HP) for diabetic wound healing, Rs 5 Lacs.

## **Editor in Books:**

- IntechOpen Title "Role of Novel Drug Delivery Vehicles in Nanobiomedicine",
   Edited by Rajeev K. Tyagi, Neeraj K Garg, Rahul Shukla, Prakash Singh Bishen
- 2. Elsevier: Nanomedical Drug Delivery for Neurodegenerative Disease, Edited by A K Yadav, Rahul Shukla and S.J.S. Flora
- 3. Elsevier: Multifunctional Nanocomposites for Targeted Drug Delivery in Cancer Therapy, Edited by A.K. Yadav, Rahul Shukla and Rewati R.Ujjwal
- 4. Elsevier: Cannabis and Its Derivatives: Guide to Medical Application and Regulatory Challenges
- 5. Elsevier: Infectious diseases: innovations applying nanoarchitectures,
- 6. Ereadon: Pharmaceutics-I, Edited by Rahul Shukla and Pankaj K. Singh
- 7. **Drug Formulation Design, IntechOpen, Edited by** Rahul Shukla Co-Editors: Akbar Ali and Aleksey Kuznetsov
- **8. Springer Nature-** Neuroendocrine-Immune Axis: A New Revolution to Understand the Pathogenesis of neurodegeneration,
- 9. **Springer Nature**-Drug Repurposing: Witnessing the Rebirth of 21st-Century Therapeutics

# **Chapter in Book Published by International Publishers:**

- 1. "Chitosan-Based Nanocarriers A Promising Delivery System for Bioactives" Book Chapter published by, NanoAgroceuticals & NanoPhytoChemicals., CRC Press, Taylor & Francis Group
- 2. "Dendrimer-based nanocarriers in lung cancer therapy" Book "Nanotechnology-based Targeted Drug Delivery Systems for Lung Cancer" Chapter Published by **Elsevier.**
- 3. "Dendrimer-based nanoparticulate delivery system for cancer therapy" Book Chapter Published by **Elsevier**, **2019**.
- 4. "Conclusion and future prospective of polymeric nanoparticles for cancer therapy" Book Chapter Published by **Elsevier**, 2019.
- 5. "History of Flavors associated with functional foods and Nutraceuticals": Flavor development for functional foods and nutraceuticals, Flavor development for functional foods and nutraceuticals, Book Published by CRC Press 2019, taylor & francis group.
- 6. "Flavors and Fragrances Natural and Food Grade Ingredients for Nutraceuticals applications" Flavor development for functional foods and nutraceuticals, Book Published by CRC Press 2019, taylor & francis group.
- 7. "Natural flavors in functional food supplements" Flavor development for functional foods and nutraceuticals, Book Published by CRC Press 2019, taylor & francis group.
- 8. "Introduction to Pharmaceutical Product Development" Pharmaceutical Product and Process Optimization Book Published by **Apple Academic Press 2019.**

- 9. "Recent Advances in the Development of Nanopharmaceuticals" Pharmaceutical Product and Process Optimization book Published by **Apple Academic Press** 2019.
- 10. "Environmental risk factors, genetic variations and their interactions: Association with susceptibility to cancer" for book on "Environmental Microbiology and Biotechnology" to be published by **Springer Nature**, Singapore.
- 11. "Human Microbiome and Malignancy: Principles, Mechanisms and Challenges" BookChapter for book on "Infectious Diseases and Microbes: Progress and Prospects" published by **Springer-Nature**.
- 12. "Application of membrane processing techniques in wastewater treatment for food industries", for book on Applications of Membrane Technology for Food Processing Industries" going to be Published by **CRC Press**.
- 13. "Retention of antioxidants by using novel membrane processing technique", for book on Applications of Membrane Technology for Food Processing Industries Published by CRC Press.
- 14. "Probiotic supplementation in major depressive disorders" for book on Volume 4: Successes, problems and future prospects of probiotics in neurodegenerative disorders, published by **Springer Nature**.
- 15. "Role of Probiotics in Rheumatoid Arthritis" for book on Volume 5: Probiotics in Cancers and immunology of Multivolume Book series entitled ""Probiotic Research in Therapeutics" going to be published by **Springer Nature**.
- 16. "Dendrimer-based drug delivery systems for tuberculosis treatment" Nanotechnology Based Approaches for Tuberculosis Treatment Published by **Elsevier.**
- 17. "Electrospun nanofibers for wound healing", in book "Theory and Applications of Nonparenteral Nanomedicines, Published by **Elsevier.**
- 18. "Nanomedicine in pain management", in book "Theory and Applications of Nonparenteral Nanomedicines", Published by Elsevier.
- 19. "Emergence of Nanophytomedicine in Health Care Setting", in Book Nanophytomedicine, published by **Springer Nature**.
- 20. "Nanophytomedicine Market: Global Opportunity Analysis and Industry Forecast" in Book Nanophytomedicine, published by Springer Nature.
- 21. "Nanotechnological Advances in Direct Nose to Brain Drug Delivery for Neurodegenerative Disorders and other Neuro-ailments", in Book on Direct Nose to Brain Drug Delivery Published by **Elsevier.**
- 22. "Immunochemotherapy combination therapy in cancer treatment", to be published by **Springer Nature**, Singapore.
- 23. "Clinical Translation Status of Nanoformulations", to be published by **Springer Nature**, Singapore.
- 24. "Role of nanomedicines in neglected tropical diseases", to be published by Wiley.
- 25. Oxidative Stress and Cancer: Role of the Nrf2-Antioxidant Response Element Signaling Pathway published by **Springer Nature**, Singapore.
- 26. Nano Drug Delivery Approaches for Lymphatic Filariasis Therapeutics, to be published by **Springer Nature**
- 27. Futuristic Potential of Nanoantibiotics Against Multidrug Resistant Tuberculosis, to be published by **Springer Nature**
- 28. Nanotechnology-mediated combinational drug delivery approach for cancer therapy Published by **Elsevier**
- 29. Application of nanotechnology assisted devices in cancer treatment Published by **Elsevier**

- 30. Chitosan as a biomaterial for implantable drug delivery Published by Elsevier
- 31. Chitosan for delivery of biomolecules Published by Elsevier
- 32. Nanomaterial-based drug delivery systems as tools for targeted therapy of neurodegenerative diseases Published by **Elsevier**
- 33. New Insights into Nanoparticulate Carriers for Direct Nose-to-Brain Drug Delivery, Nanoengineering of Biomaterials, 261-307, **Wiley**
- 34. Application of nanotechnology assisted devices in cancer treatment, Nanotherapeutics in Cancer Vaccination and Challenges, **Elsevier**
- 35. 3D Nano printing in the Biomedical Industries, Smart 3D Nano printing, CRC Press
- 36. Concept of Nanomedicine in Endocrine Hormone Cancer Treatment, Springer.
- 37. Regulatory consideration and pathways for vaccine development, **Springer**Nature.
- 38. Dendrimers in photodynamic therapy, Elsevier.
- 39. Preformulation Studies: A Versatile Tool in Formulation Design, **Intechopen**.
- 40. Nanoscaffolds and role of 3D-printed surgical dressings for wound healing application, **Elsevier**.
- 41. Hybrid Nanomaterials as Novel Therapeutic and Imaging Modalities, Springer
- 42. Polymeric Micelles in the Delivery of Therapeutic Phytoconstituents, Springer
- 43. Therapeutic Potential of Nanocrystals for Targeting Lymphoid Carcinoma, A Mhaske, R Shukla, **Springer**
- 44. Multifunctional nanocrystals for liver cancer, Shalini Shukla, Shalu Singh, Rahul Shukla, Multifunctional Nanocomposites for Targeted Drug Delivery in Cancer Therapy **Elsevier**.
- 45. Regulatory Aspects for Clinical Applications of Nanophytomedicines, S Shukla, A Mhaske, R Shukla, Springer.
- 46. Nanocarriers for the Delivery of Cosmeceuticals, S Shukla, A Mhaske, R Shukla, Springer.

### **Invited Talks**

- Invited Speaker in DST SERB Sponsored workshop- Development and Characterization of Bionanomaterials for Drug Delivery and Tissue Engineering, Centre for Development of Biomaterials and Department of Life Sciences, Sharda School of Basic Sciences and Research, Sharda University, India. 27 May- 1 June 2024.
- Speaker in Young Scientist Conference in India International Science Festival (IISF), THSTI, Faridabad India 17-20 Jan 2024.
- Speaker in Emerging Pharmacologist, IPSCON-2023, SRM Chennai14-16 Dec 2023.
- Title "Dual nanoengineered Sphingomyelin coated Vincristine nanocrystals for targeting cerebral carcinoma at Brain Tumor" by Brain Tumor Northwest England (BTNW) Annual Retreat, 15-16 Dec 2022 Marriott, United Kingdom.
- Title "Development and evaluation of Silibinin loaded Glyceryl monooleate Nano liquid crystalline for Alzheimer's therapy. Swansea University, United Kingdom 2022.
- Speaker in 5-day Training Program in Animal Handling and drug administration, NIPER Raebareli. India, 28 April- 2 May 2024.
- **Invited talk on** "Pharmaceutical Innovation & Product development of therapeutics" **Lyotalk,** Novotel, **Hyderabad**, Feb 23-24'2017.

- Llyod's Institute of Technology, Noida Webinar dated 19 May'2021
- Faculty of Pharmacy, Dharmsinh Desai University, Nadiad Webinar dated 21/8/2021
- BICON-2021 Indo Japan FestWebinar dated 15 Dec'2021
- Invited Expert talk on "Pharmaceutical Nanocrystals Techniques", Delhi Pharmaceutical Sciences & Research University, New Delhi, India.
- Invited Expert talk on "Drug development and delivery systems: Strategies, Challenges, and Opportunities", Institute Pharmaceutical Sciences, Lucknow, India.
- Invited Expert talk on DST Stuti "Pharmaceutical Nanocrystals: heralding greater potential in Drug Delivery with versatile applications", **Indian Veterinary Research Institute**, **Izatnagar**, (U.P).
- Invited talk on "Doxycycline loaded nanoparticles of PLGA for controlled delivery and effective therapy against lymphatic filariasis", held at ISNSC 2016, Mercure Brisbane, Australia.
- Invited talk on Development and evaluation of Silibinin loaded Glyceryl monooleate Nano liquid crystalline for Alzheimer's therapy. Swansea University, UK on the 22-23rd of August 2022.
- Invited talk on "ISNSCON2018: 6<sup>th</sup> World Congress on Nanomedical Sciences" held at Vigyan Bhawan, New Delhi.
- Poly (lactic-co-glycolic acid) (PLGA) & Poly (caprolactone) (PCL)Nanoparticles for Sustained delivery of anti-filarial drug. (Oral Presentation) ASP-14, held at Indian Institute of Technology, Guwahati.
- Microparticles of Diethylcarbamazine Citrate for the Treatment of Lymphatic Filariasis.ICONN-2013 held at SRM University, Chennai. (Oral Presentation)
- Faculty Development Program (FDP) Invited Expert talk on Drug nanocrystals: Promising approach in drug delivery, applications and challenges, SGT University, Haryana India
- Invited Eminent Lecture Series May 9-17, 2023, at RITM, Lucknow, U.P, India
- Invited Expert talk on Drug Discovery, Design & Development of Dosage Forms at National Conference held at KPSM Pharmacy college, Sitapur, U.P, India
- Invited talk in Professional Development Programme (PDP) on "Innovations, opportunities, and challenges in Life Science Sector Skilling & Research, 20 July 2023.

# Workshop & National School Participated & Distance Learning Courses.

- Participated in Faculty Development Programs on Department of Biosciences & Biotechnology, Banasthali Vidyapeeth, Rajasthan, India
- NSIL 2024, National Summit of Institutional Leaders:Institutions for National Development,15-17 Feb 2024.
- Participated in QIP Short term course in Department of Material Sciences, IIT BHU Faculty Development Programs on "Nanomaterials Synthesis, characterizations & Applications",1-6 July 2019
- The Distance Learning General course on Intellectual Property from Feb 1-April 28,2013 conducted by WIPO Academy completed.
- Participated in Nano Mission School on "Nano Science & Nano Technology-Biological Sciences" conducted by INST, Mohali from Nov 6<sup>th</sup>-11<sup>th</sup>, 2017.
- Participated in Workshop on Biorisk Management, hosted by Sandia National Lab, USA, 11<sup>th</sup> -15<sup>th</sup> Sep'2017.

- Participated in National Workshop on "Research Methodologies in Animal Sciences"
   Organized by Department of Zoology, Centre for Advanced Studies (UGC), Panjab
   University, Chandigarh from March 21<sup>st</sup> to 28<sup>th</sup> March, 2017.
- Participated in Symposium cum workshop on "Then Integration of Biological Methods in the Nano field of Chemistry" held at SAIF, Panjab University, Chandīgarh, 3<sup>rd</sup> - 4<sup>th</sup> March'2017.
- Participated & Presented Paper in National School on Sustainable Polymers conducted by Dept. of Chemical Engineering, IIT, Guwahati from Jan 6-11 2014.
- Scientific and Technical Awareness Programme on Animal Experimentation, March 26-30,2012 held at National Laboratory Animal Centre, Lucknow

# **Membership of Professional Bodies**

- ➤ Member British Society of Nanomedicine (BSNM)
- ➤ Life Member of Association of Pharmaceutical Teachers of India (APTI), India.
- Life Member of Indian Pharmacy Graduates Association (IPGA), New Delhi.
- Life Member of Indian Red Cross Society, New Delhi.
- Life Membership of Indian Academy of Neurosciences (IAN).
- Life Membership of Alumni Association of IIT (BHU), Varanasi (AASSII).

### **Other Institutional Activities:**

- Member of INSTITUTION'S INNOVATION COUNCIL (IIC), NIPER RAEBAELI, India, 2022-24.
- Member of Training & Placement Cell, NIPER RAEBAELI, India,2021-24.
- Member of Institutional Animal Ethic Committee (IAEC), NIPER RAEBAELI, India, 2023-24.
- Member of Hindi Rajbhasha Cell, NIPER RAEBAELI, India, 2023-24.
- Chairman Mess Committee NIPER RAEBAELI, India, 2023-24.

## **Extra Curricular Activities**

- ♦ Member of scientific, registration and reception committee of 59<sup>TH</sup> Indian Pharmaceutical Congress held at B.H.U.
- Got N.C.C 'B' Certificate.
- Participated in National Games-94, Pune.
- Life member of Youth hostels association of India.

### RESEARCH STUDENTS SUPERVISED

M.S (Pharm): Completed -48 Ongoing:8 PhD: Awarded: 2 Ongoing:5, PDF:1 (N-PDF)

H index-29 i10-index- 54 Citations > 2200