

# RUPESH SANJAYKUMAR JAIN

## OBJECTIVE

A hardworking and passionate individual with strong research interest and organizational skills eager to secure a scientist position within a research and development organization

## EDUCATION

Grade	School/College	Board/University	Year of Passing	%/CGPA
<b>Doctorate Ph.D.</b> (Pharmaceutical Sciences)	<b>Birla Institute of Technology and Science BITS Pilani, Pilani</b>	BITS Pilani	2018-2023	<b>8.85</b>
<b>M. Pharm</b> (Industrial Pharmacy)	<b>Manipal College of Pharmaceutical Sciences, Manipal, Karnataka, India</b>	Manipal University	2016-2018	<b>GPA- 7.26</b>
<b>B. Pharm</b>	<b>SNJB's S.S.D.J College of Pharmacy, Chandwad, Nashik</b>	Pune University	2016-2018	<b>63.75 %</b>

## RESEARCH SKILLS AND TECHNIQUES

- Expertise in formulation and optimization of the nanoparticulate system, including Liposomes, Nanostructured lipid carriers (NLC), Solid-lipid nanoparticles (SLN), Cell-penetrating peptide based hydrogel, In-situ- gel formulations, transdermal patch, polymeric micelles, Microsphere, polymeric nanoparticles through Quality by design (QbD) approach, determination of drug release kinetics, solubility studies and microscopic evaluation of nanoformulations.
- Expertise in QbD based approach and hands on experience on DOE and JMP software's.
- Pharmacokinetics and pharmacodynamics (PK/PD) analysis of nanoformulations in skin cancer mice model
- Hands-on experience in solubility analysis, stability analysis, bulk characterization, and crystallinity and polymorphism analysis.
- Adept at data interpretation, operation, and handling of sophisticated analytical instruments such as Zeta-sizer, Lyophilizer, Rheometer (Rheological parameters), Probe sonicator, High-pressure homogenizer, Microfluidic technique, Rotatory evaporator, Ultracentrifuge technique, Liquid chromatography-mass spectrometry (LCMS), High-performance liquid chromatography (HPLC), Gas chromatography- mass spectroscopy (GCMS), Ultraviolet (UV) and Fluorescence spectroscopy along with Infrared spectroscopy (IR) and Differential Scanning calorimetry (DSC), Thermo Gravimetric Analysis (TGA), Powder X-ray diffraction technique, Nuclear magnetic resonance spectroscopy (NMR) and Confocal Microscopy.
- Expertise in in-vitro evaluation of nanoformulations using cell culture-based studies. Molecular biology techniques including RT-PCR, DNA fragmentation, Western blotting, Flow cytometry, ELISA, IHC and biochemical estimation
- Hands-on experience in the in-vitro evaluation of nanoformulations using tissue culture-based, bacterial cultural-based studies, and H and E studies.

- In-depth knowledge of regulatory guidelines (FDA, EMEA, ICH, SUPAC, cGMP and GLP) and software handling. DD Solver, GastroPlus, WinNonlin, Chromeleon, Graphpad Prism, Origin, Chem Draw, and Coral draw.
- Hands-on experience in data digitization, Nonlinear and linear compartment analysis, In-vitro In-vivo correlation, and PBPK modeling by Phoenix WinNonlin, Simcyp and PK-Sim.

## RESEARCH EXPERIENCE

**Department of Pharmaceutics, BITS Pilani, Pilani campus, India**

**Since July 2018**

- **Project-** Dual drug delivery based topical photoactivatable nanocarriers used in the photodynamic therapy against skin cancer (**Thesis Title**)
- **Project-** Chemotherapeutic drug-loaded oligopeptide (Cells penetrating peptide R8H3-C18) containing transferosomes embedded hydrogel for the treatment of melanoma cancer
- **Project-** Photoactivable PEGylated liposomes for breast cancer
- **Project -**Formulation and Evaluation Injectable Suspensions of Betamethasone Sodium phosphate and Betamethasone Acetate. (**Industrial Project- worked as Junior Research Fellow (JRF) From July 2018- June 2020**)
- **Project-** lipid based Nanoemulgel system for the treatment of arthritis

**Department of Pharmaceutics, Manipal University, Manipal, India**

**June 2016- May 2018**

- **Project-**Formulation and evaluation of transdermal patches of Carvedilol by using novel polymer. (**Title of Thesis**)
- **Project-** Sodium Alginate beads embedded in Chitosan as a 3D dual drug releasing scaffold. Fabricated and evaluated 3D scaffolds using biopolymers for an improved drug delivery system.
- **Project-** Co-crystallization of BSC class II Drugs by Using Hot Melt Extrusion Technology.  
**Project-** Microencapsulation of drug by Hot Melt Extrusion Technology with pH sensitive polymer (Enteric coating material) and its evaluation

**S. S. D. J. College of Pharmacy, Chandwad, Nashik, India**

**January 2015**

- **Project-** Evaluation of a novel biomaterial for floating drug delivery

## RESEARCH PUBLICATION

### Research article as First Author

- **Rupesh Jain**, Sunil Kumar Dubey, Gautam Singhvi. Stability Indicating Validated High-Performance Liquid Chromatography Method for Simultaneous Estimating Chlorin E6 and Curcumin in Bulk and Drug-Loaded Lipidic Nanoformulation. Sep. Sci. Plus 2022, doi:10.1002/SSCP.202200107.
- **Rupesh Jain**, Rajesh Pradhan, Siddhant Hejmady, Gautam Singhvi, Sunil Kumar Dubey, Fluorescence-based method for sensitive and rapid estimation of chlorin e6 in stealth liposomes for photodynamic therapy against cancer. Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy. 2020 Aug 12; 244:118823.
- **Rupesh Jain**, Ila Sarode, Gautam Singhvi, Sunil Kumar Dubey, Nanocarrier based Topical Drug Delivery- A Promising Strategy for Skin Cancer. Current Pharmaceutical Design. 2020 Aug, 26;36. 4615 – 4623
- **Rupesh Jain**, Sunil Kumar Dubey, Gautam Singhvi. The Hedgehog pathway and its inhibitors: emerging therapeutic approaches for basal cell carcinoma. Drug discovery today. 2021 Dec 9. DOI10.1016/j.drudis.2021.12.005.

## Patents:

1. Positive charge-based lipid formulations for drug delivery (202211054911 TEMP/E-1/61961/2022-DEL)
2. A lipid-based foam nano emulgel composition for topical application (202011006183 TEMP/E-1/6573/2020-DEL )
3. A photodynamic chemotherapeutic lipidic nanoparticle, a nano-formulation thereof and a method of preparing the nanoformulation (202311003263 TEMP/E-1/1794/2023-DEL)

## HONORS AND AWARDS

- Won numerous medals in free relay swimming competitions at Manipal University
- Won a certificate in Water Painting at Manipal University

## PERSONAL DETAILS

**Date of Birth:** 12th July 1995

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**Citizenship:** Indian

**Languages:** English, Hindi, Marathi, Marwadi, and Gujarati

## REFERENCE –

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General Manager,  
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Prof. Ranendra N. Saha.  
Former Director, BITS, Dubai Campus and Former Acting Vice Chancellor of BITS, Pilani, India  
Email- rnsaha@pilani.bits-pilani.ac.in

The above information I provided is true, and I have all the relevant documents to authenticate the same.

**Rupesh Jain**