Faculty Profile

Name :	**Ms. Shital C.Trivedi**
Date of Birth :	**09/11/1978**
Educational Qualifications:	
Pursuing Ph.D. (University)	**Ph.D. Scholar, Pharmacy Discipline (Registered batch 2018-19) Gujarat Technological University**
-Master's (University)	**M. Pharm. in Pharmaceutical Technology, M. S. University, Baroda (2005-2007)**
-Bachelor's(University)	**B. Pharm., S. P. University V. V. Nagar (1998-2002)**
-Diploma(University)	**D. Pharm., S. P. University V. V. Nagar (1996-1998)**
-Any Other: Post Graduate Diploma in Business Administration (Operation Management)	**Symbiosis Centre For Distance Learning, Pune. (2004-2006)**
Area of Specialization :	**Pharmacy, Pharmaceutics, Pharmaceutical Technology**
Date of Joining (LJIP)	**01/08/2012**
Present Position :	**Assistant Professor, Pharmaceutical Technology, L.J. Institute of Pharmacy**
Contact Details:	
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Work Experience :	Teaching **(9 years)** Industrial (3 Years, after B. Pharm) Research& Development(--)
Subjects taught :	
-Under Graduate level	**Unit Operations I & II (1st and 4th sem.), Pharmaceutical engineering, Physical Pharmacy (2nd and 3rd sem.), Dispensing Pharmacy (Pharmaceutics-New course), (4th sem.), Forensic Pharmacy (6th sem.) Pharmaceutical Microbiology I & II (5th & 6th sem.) Pharmaceutical Technology-I & II (Industrial Pharmacy-New course) (7th & 8th sem.), Dosage form design (7th and 8th sem.)**
-Post Graduate level	**PFD, Advances In Drug Delivery system (New course) (1st sem.), GRR-Orange Book, NDDS-I (2nd sem.), ITD (3rd sem.), Dissertation (4th sem.)**
Area of Specialization in your field	**Conventional dosage forms.**
A brief account of work done in M. Pharm., and to be done by you in the Ph.D.	**M.Pharm:** ***"Development of Iron Oxide Nanoparticles for Intravenous Iron Supplementation"*** Iron deficiency anemia is a common disease due to its highly regulated metabolism in the human. Iron utilization is important to replenish iron. The parenteral marketed formulations of iron oxides having limitation of maximum dose and poor utilization in the

macrophage cells. Due to size less than 100 nm, these iron formulations diffuse back from the macrophage cell fenestrae membrane and results in poor utilization.

The formulation with less toxicity and size between 100 to 500 nm, back diffusion from macrophage cell membrane may be prevented and utilization of iron formulation can be maximized. This type of formulation is expected to reduce the recovery time by effective utilization of iron.

The results of experimental data had shown that the Rats on iron deficient diet developed anemia at 12 weeks (4 weeks after diet) as reflected with Hb< 12 g/dl and Ht< 36 %.
The rate of Hb synthesis was faster in magnetite [prepared iron oxide formulation with mean diameter 100-500 nm] treated group as compared to the group treated with iron dextran [mean diameter <30 nm]. There was a significant increase in haemoglobin level and haematocrit level in the group of animals treated with prepared magnetite iron oxide formulation as compared to the treated with standard iron dextran formulation.

The results of the work established correlation of particle size and hematinic effect of magnetite which support the hypothesis. As it is reported that bypass of iron oxide particle from reticulo endothelial system due to back diffusion from cell membrane gets minimized with particle size in range of 100 to 500 nm. It leads to rapid metabolism and early utilization of iron obtained from magnetite for synthesis of haemoglobin, particularly in iron deficiency anaemia. However, the detailed pharmaco-kinetic study using radio labelling technique on large no. of animals is required to prove the hypothesis of this study.

For Ph.D.
"Development And Evaluation Of Modified Release Oral Iron Formulations''

Objectives of the research work is to formulate and evaluate gastroretentive floating pellets of Dried Ferrous Sulphate by extrusion spheronization technique, and to formulate and evaluate of gastroretentive in situ gel of Dried Ferrous Sulphate. Comparison of optimized formulations with suitable marketed formulations.

Rationale behind the need of gastroretentive formulation of iron:

- Conventional oral iron formulations are having poor bioavailability due to carrier mediated absorption of iron in upper gastrointestinal region with lower residence time at absorption site.
- Bioavailability is highly variable depending on the iron requirement of body. For ferrous preparations usually ranges between 10 to 15%, while for the ferric preparations it is 3 to 4 times lower. Acidic pH of the stomach is also important to keep iron in a solubilized form.
- Due to immediate release of entire dose of irritant drug leads to gastrointestinal side effects like nausea, heartburn, pain, and constipation which are the most commonly reported side effects of conventional iron formulations. May be because of this reason, according to WHO guideline, the elemental iron dose required for the treatment of iron deficiency anemia is 120 mg/day.

	• Due to above reasons higher dosage frequency (3 to 4 times a day) and prolonged duration of treatment is required to replenish deficient iron with conventional oral iron formulations. • If iron can be formulated as gastroretentive formulation which can provide prolonged and controlled release of iron in upper part of gastrointestinal tract, may improve bioavailability and reduce gastrointestinal side effects.
New Technologies /methods developed by you	**-----**
Scale up and Technology Transfer	**-----**
Industrial Projects Carried Out :(No.)	**-----**
Revenue/Royalty earned by the Organization in Indian Rupees	**-----**
No. Government funded Projects undertaken by you and their total value	------
Research Guidance :	
-Master's	**10 (7 co-guided)**
-Guide for PhD	**NA**
Summer/Winter/School/Conference/ Workshops Conducted:	**1**
Patents taken/applied for:	---

Publications:
Research Papers : 02

1. **Journal of Pharmaceutical Science and Bio-scientific Research** 2015
   A Review On: SeDeM Expert System in Formulation Development of Pharmaceutical Forms.
   http://www.jpsbr.org/volume_5/JPSBR_Vol_5_Issue_1_htm_files/JPSBR15RV4018.pdf

2. **Journal of Pharmaceutical Science and Bio-scientific Research** 2015
   Review On Sustained Release Matrix Tablets: An Approach To Prolong The Release.
   http://www.jpsbr.org/volume_5/JPSBR_Vol_5_Issue_1_htm_files/JPSBR15RS30024.pdf

Conferences ,Workshops and Seminars

1. GUJCOST sponsored National seminar on "Quality by Design: Recent Perspective on Process Development and Implementation" on 24th & 25th July' 2015

Notable Achievements and activity executed:

- **Passed BET examination with 5th rank at Gujarat state level** in 1998**.**
- **Passed GATE examination (IIS, Bangalore) with 95.43 percentile** in 2002.
- **Stood First in the First & Second Year B. Pharm (1998, 1999). Got 2nd rank in Final year B. Pharm (2002) & D. Pharm. (1997). Scored highest marks in Pharmacology-II in Final B. Pharm (2002).**
- **Worked as Coordinator, 3rd Semester class (from July, 2013 to June, 2015) LJIP**
- **Person in charge of Time table committee of LJIP since 2018, Committee member of current PCI & Anti-ragging committee of LJIP.**
- **Mentor (under student mentorship program) of 27 students of 2017 Batch.**

Association with Professional Bodies	-----

Grants Received/Fetched:	Students team of LJIP guided by Ms. Shital Trivedi, got Rs.65000/- Project Grant Under SSIP Scheme of Government of Gujarat (2020)**.**
Consultancy and Expertise available for industries	Conventional dosage forms.