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- ❖ **Name of the International Conference/ Seminar/Symposium/ Workshop** : PharmaTech 2014. The 3rd International Conference and Exhibition on Pharmaceutical, Nutraceutical and Cosmeceutical Technology.
- ❖ **Title of the abstract accepted** : Synthesis and characterization of mesoporous silica nanoparticles as carrier for delivery of quercetin
- ❖ **Venue & Date** : Bangkok, Thailand, 1-2nd December 2014.
- ❖ **Money sanctioned** : ₹ 32,834/-
- ❖ **Money reimbursed** : ₹ 28,836/-

Participation Report

PharmaTech 2014 on the theme “Innovative Pharmaceutical Technology for Research, Manufacturing and Healthcare Excellence” held at Queen Sirikit National Convention Centre, Bangkok, Thailand on 1-2 December 2014, was an excellent scientific platform for the participants particularly in areas of novel drug delivery systems, targeting approaches for cancer therapy, oral drug delivery and brain drug delivery.

The two day conference had five plenary and keynote talks each. Eleven oral presentations were also lined in two parallel sessions. Eighty five posters were presented in the poster session. Enormous participation from different parts of the globe was seen viz. Japan, Australia, India, Italy, Germany. There were various invited lectures from academia and industry.

It benefitted participating scientists in terms of gained knowledge, innovative research ideas, friendship and academics during this two days event. Eminent scientists from research areas in pharmaceutical, nutraceutical and cosmeceutical technology presented plenary and keynote lectures. Prof. Keiji Yamamoto, Chiba University, Japan highlighted on challenges to molecular pharmaceuticals and what are the developments and improvement approaches for dosage form development. Prof. Hashida, Kyoto University, Japan focused his talk on new gene delivery systems using glycosylated bubble lipoplexes with Ultrasound exposure. Dr. Crispin R Dass, Curtin University, Australia delivered his talk on bone regeneration and cancer treatment with Chitosan. Other invited talks by Dr. Colombo, Italy and Dr. Kleinebudde, Germany were focused on oral drug delivery and the challenges being faced by the Pharmaceutical industries.

(i) The developments presented in the conference focused on Mesoporous silica nanoparticles (MSNs) (first synthesized by Mobil researchers in 1992) owing to their attractive features such as high surface area and pore volume, easily modified surface, tunable pore size, high drug loading capacity, smart drug release mechanism, stimuli responsive drug release, biocompatibility, chemical inertness and multifunctional capacity for therapeutically active molecules, gaining increasing interest as versatile drug delivery carriers especially drug targeting and controlled release drug delivery system. The objective covered in the conference was to demonstrate the potential of biocompatible MSNs in resolving the drug delivery issues i.e. poor water solubility and low oral bioavailability, associated with Quercetin (3,5,7,3',4'-pentahydroxyflavone), a plant derived polyphenolic flavonoid extracted from *Sophora japonica* L., with wide range of desirable pharmacological potential but limited clinical usage.

(ii) Some of the novel research works/ideas/developments resulted/presented from the conference included vaccine delivery by biopolymeric and lipid microparticles, technology challenges to acute brain ischemia treatment, nanoparticle characterization by small angle X-ray scattering (SAXS) from a synchrotron source, microwaves as transdermal permeation enhancer, Design of Experiments (DoE), development and applications of nutraceuticals derived from marine organisms, geometric control in oral modified drug release, nanotoxicology of drug delivery systems for RNAi etc. Various interesting research ideas viz. the use of electrohydrodynamic atomization technique for preparing colonic drug delivery system, an efficacy study on the skin whitening multiple emulsions loaded with green tea and lotus extracts, influence of formulation parameters on lipid-based implants, dry powder inhalation using cyclic cluster dextrans, osteoarthritic treatment using microemulsions of *Morus alba*, solid-state grafting of poly(ethylene glycol) onto alginic acid for dosage form design application were highly acknowledged.

(iii) The work presented as a poster, in the conference, is a part of the ongoing research work in our laboratory; few objectives of the planned research are yet to be achieved and under progress, thus could not be published in the present form.

Contribution to the Conference

The presented work in the conference focused on the potential of mesoporous silica nanoparticles for the delivery of poorly water soluble drugs with improved dissolution rate as well as bioavailability. The concept and results were very well accepted by the Professors and the participants at the session. Various inputs and outputs resulting from the interaction will be deliverable for the future perspectives of this project work.

· Overall, the conference proved to be very useful for enhancement of scientific and technical knowledge in drug delivery areas being applied in International arena and also many possible collaborative work options have been explored during the conference which I am of the opinion can be generated in fruitful ideas in near future. The scientists also suggested the communication of this work for publication in leading International Journals.