



राष्ट्रीय औषधीय शिक्षा एवं अनुसंधान संस्थान

**NATIONAL INSTITUTE OF PHARMACEUTICAL
EDUCATION AND RESEARCH (NIPER)**

(Ministry of Chemicals & Fertilizers, Govt. of India)

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Statement of Research Achievements

The National Institute for Pharmaceutical Education and Research (NIPER) was designed and established to provide advanced (graduate level) training in pharmaceutical sciences in India. In his tenure of about 20 years, our group, though outstanding research contributions has established NIPER as one of the premier solid-state research centers in the world. Our contributions have been published in all the major pharmaceutical journals. Our 175+ publications attest to our exceptional productivity .

I am one of those rare individuals with the ability to conduct hypothesis-based research work in pharmaceutical materials science and then find tangible practical applications of the work. My ability to translate the research from the laboratory into a drug product is evident from the 20+ patent applications filed by me. I have 07 granted and 28 applied patents to my credit. Very few people in the pharmaceuticals community can match this stellar combination of peer reviewed publications (prolific scholarship) combined with innovation (patents).

I have also made significant educational contributions , while conducting cutting-edge research,. I have provided research training to over 150 students at the MS level and 20 students have completed their PhD under my supervision. Many of my students have gone to the United States or Europe, either to pursue their PhD or for advanced (post-doctoral) training. After completing their training the students have stayed on and conduct research in both pharmaceutical (for example, Genentech, Astra Zeneca, Novartis) and excipient (Capsugel) companies and are also in academia (tenure-track) . Thus, the students trained by me are in several parts of the world!

Contribution to industry

I worked for almost 8 years, with the research and development department of two major Indian pharmaceutical companies, before joining NIPER. I amalgamated my industrial experience of formulation development with the expertise in solid state Pharmaceutics and have been providing support to both Indian and overseas pharmaceutical companies. I am the most prolific academician in India, in the field of Pharmaceutics, with respect to interaction with the industry. Our lab has completed more than 600 industry sponsored projects, with companies like – DSM Sinochem India Limited, Dr Reddys Laboratories, Natco Pharmaceuticals, Mylan Laboratories, Orchid Pharmaceuticals, Hospira, Frasenius Kabi, Laurus Laboratories, Sandoz, Cipla, Intas, Cadila Pharmaceuticals, Zydus Cadila, Ranbaxy Labs Limited, Sun Pharmaceuticals, Aurobindo Pharma, Hetero Drugs, Torrent Pharmaceuticals, Aizant, Pfizer Animal Health (Now called Zoetis), Medreich Pharmaceuticals, Medochemie, United Laboratories etc. our laboratory has contributed to the growth of Indian generic companies. We expanded the concept of "sameness" of the generic formulations to the concept of "sameness of formulation" and proposed a systematic decision tree for reverse engineering of the 'Reference Listed Drug Products'.

This led to accelerated development of generic formulations by improving probability of bioequivalence. I have also acted as a technical expert in several patent litigations involving pharmaceutical products.

Brief Citations of the research work which has already received award -


I was awarded Organization of Pharmaceutical Producers of India (OPPI) award in 2006 in Pharmaceutics for carrying out novel research in solid state characterization and development of drug delivery systems. The citation acknowledged "*extensive work in the area of amorphous systems, polymorphism, particle engineering and permeability of drugs across intestinal membrane. Of immense importance is his work in molecular understanding of the higher-energy amorphous systems and some novel concepts like use of enthalpy relaxation studies for screening stabilizers for amorphous systems.*" However, subsequently further work was carried out to establish a co-relationship between enthalpy relaxation and physical stability of amorphous forms (Bansal SS, Kaushal A and Bansal AK. *Co-relationship of physical stability of amorphous dispersions with enthalpy relaxation. Die Pharmazie, 2008:63(11), 812-814*).

In 2008, American Association of Indian Pharmaceutical Scientists (AAiPS) conferred 2008 AAiPS Distinguished Education and Research Award for dedicated contribution to the field of Pharmaceutical education and sciences and his keen interest in the development of AAiPS.

American Association of Pharmaceutical Scientists (AAPS), in the year 2016, conferred Fellow status "as a distinguished contributor and acknowledged leader in the advancement of the pharmaceutical sciences."

In 2018, awarded "IPA-ACG Scitech Innovation Award 2018 for Best Innovative Development of Solid Dosage Form", in recognition of NanoCrySP a technology platform for Nano Crystalline Solid Dispersion.

I was conferred "Award of Appreciation" on National Technology Day in May 2017 and 2018 at NIPER-SAS Nagar, in recognition of significant contribution to NIPER-SAS Nagar.


Sept. 23, 2021
Arvind K Bansal