

Executive summary of Department Review: Department of Metallurgical Engineering and Materials Science

The review of the Department of Metallurgical Engineering and Materials Science (MEMS) was carried out on the 7th and 8th of January, 2014. The review committee consisted of Prof. G Sundararajan, Director, International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI), Hyderabad; Prof. Dhananjai Pandey, Professor, School of Materials Sci. and Technology, IIT-BHU, Varanasi; Dr. P Pradip, Chief Scientist and Head Process Engineering Innovation Lab, Tata Research Development & Design Centre (TRDDC), Pune; Dr. Sanjay Chandra, Chief Technology Officer, TATA Steel, Jamshedpur and Dr. Gautam K Dey, Associate Director, Materials Group, BARC, Mumbai.

Department Statistics

There are 31 faculty members in the Department. A total of 231 B. Tech students, 142 Dual Degree students, 159 M. Tech and 61 Ph. D. students have graduated during the period of review. The department runs a total of 95 courses in a year. There are 25 teaching and research laboratories in the Department. The total number of research papers published in the past five years (in journals and conferences) is about 760; in addition, there have been two books published and 5 patents obtained in last five years. More importantly, the total number of citations for the publications has increased from 931 in the year 2008 to about 2013 in the year 2012. A total of 56 awards and recognitions were won by the faculty during the period. The department generated funds to a tune of Rs. 32.1 crores through various R&D projects during the period 2008 - 2012. The department also earned an amount of Rs. 408.5 lakhs through consultancy projects during the same period.

Review Committee Observations and Action Plan

The flexibility of the undergraduate (UG) curriculum was well appreciated by the reviewers. They were also appreciative of the training imparted to doctoral students. As suggested by the reviewers, efforts will be made to introduce research component at the UG level as well as give adequate industrial exposure to the UG students through tours & projects and expose them to speakers from the industry. Further, as suggested by the reviewers, the laboratory facilities will be enhanced and the number of laboratory courses will be increased. The UG and PG curriculum committees will also incorporate the suggestions regarding course work for Masters students and the DD specialisations. Finally, the Department will implement the review committee suggestion that the maximum class strength be limited to 60 students.

The reviewers were impressed by the diversity of research in the Department. They have identified at least eight areas in which the Department is very strong. The reviewers have also indicated that the research ambience, the quality and impact of the research to be very good. The reviewers feel that the Department has a critical number of faculty members in the area of computational materials science and engineering to make an impact. Their suggestion for increase in the number of faculty of the Department and succession planning during recruitment will be implemented. The Department will also make the required efforts to hire faculty in the suggested areas to reach critical numbers in these areas.

The reviewers have suggested several strategies to increase the visibility of the Department including bringing international conferences to the Department, bringing major projects to the Department by groups of faculty members, and collectively nominating faculty members for awards and recognitions. Efforts in these directions will be made.

Overall, the review committee has found the curriculum, teaching and research in the Department to be excellent in several aspects; it has also made several pertinent suggestions. The Department will make every effort to incorporate and implement the suggestions so that its impact will be felt far and wide.

