

March 23, 2005

Prof. John Lowther, Chair
University Sabbatical Leave Committee
Department of Computer Science
Michigan Technological University
Houghton, MI 49931

Subject: Report for Sabbatical Leave for Spring and Fall 2004 Semesters

Dear John,

Enclosed, please find a copy of a monograph based upon my lecture notes for the course entitled "Design with Plastics" – MEEM4635. As discussed in my proposal for sabbatical leave, this will be used as a text for this course in future.

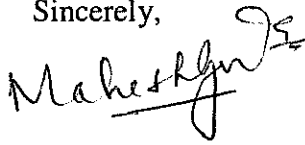
Besides preparing this course guide for MEEM4635, I also completed the following tasks during my sabbatical leave.

1. On August 9 and 10, I visited The Dow Chemical Company in Midland, Michigan to plan new experiments on polymer extrusion. Besides me, two of my graduate students, Karl Walczak and Yong Sun, also visited Dow Chemical. These two students stayed at Dow Chemical for a week from August 9 to 13. During this period, with the help from a Dow Chemical technician, these students completed the planned experiments on polymer extrusion.
2. From August 16 – 20, I visited General Electric Corporate Research and Development Center in Schenectady, New York. One of my graduate students, Di Ling, also accompanied me during this visit. During this week, we conducted experiments on ceramic injection molding. After the visit, in the Fall 2004 semester, we also completed the corresponding computer simulation of the experiments we conducted at General Electric. Besides conducting the ceramic injection molding experiments, on August 19, I also gave a seminar entitled "Effect of Elongational Viscosity on Polymer Processing" at General Electric.
3. On the way from Midland, Michigan to Schenectady, New York, I also visited two other companies to discuss possible research collaboration.
 - On August 11, I gave a seminar entitled "Effect of Elongational Viscosity on Polymer Extrusion" at Advanced Elastomer Systems in Akron, Ohio. Advanced Elastomer Systems is a subsidiary of Exxon-Mobil.
 - On August 13, I visited ICEM-CFD, to discuss our research. ICEM-CFD, which is a subsidiary of ANSYS, Inc, is located in Livonia, Michigan.These visits to Advanced Elastomer Systems and ICEM-CFD were in addition to the tasks included in my sabbatical leave proposal.

4. From October 11 – 13, I visited the University of Wisconsin at Madison. On October 11, and 12, I attend the Third Joint Rheology and Polymer Processing Workshop arranged by Center for Advanced Polymer and Composite Engineering (CAPCE), and by Applied Rheology Center. On October 12 and 13, I also attended the CAPCE Semi-Annual Technical Review and Industrial Advisory Board Meeting. On October 11, in the Joint CAPCE-ARC Workshop I gave a presentation entitled “Effect of Elongational Viscosity on the Flow in a Twin-Screw Extruder”. I also presented a poster entitled “Effect of Elongational Viscosity on the Flow in Extrusion Dies” in the Joint CAPCE-ARC workshop as well as in the CAPCE Technical Review and Industrial Advisory Board Meeting.

If you have any further questions about sabbatical leave, please let me know.

Sincerely,

A handwritten signature in black ink, appearing to read "Mahesh Gupta". The signature is written in a cursive style with a horizontal line under the name.

Mahesh Gupta

See Faculty Personnel records to view
entire manual.

Mechanical Design with Plastics

Mañesh Gupta

Mechanical Engineering-Engineering Mechanics
Department
Michigan Technological University
Houghton, MI 49932