A New Cooperative IMI-NFG Course

MAT 498-010: Glass Processing (CRN: 19586; 3 credits)

A unique international course to be offered only once in Spring 2015 with two 75-minute lectures/week on Tuesdays and Thursdays tentatively 1.00 - 2.15 pm EST

Tentative start date: January 20, 2015

Glass and glass-ceramics are widely used in consumer goods as well as advanced high-tech devices. Therefore, one must first make the glass and then make desired items out of glass in suitable size and shape at an acceptable cost. A wide range of glass processing steps have been developed over the period, while research continues for finding new ways of making complex products. There is no place in the country where one can learn about this very important topic of materials science and engineering in a comprehensive manner. To fill the void, this course intends to give an overview of glass processing methods as practiced today or have promise for the near future. A rare feature of the course is that majority of lectures will be given by practitioners in the industry. Appropriate for science/engineering seniors and grad students. For further information, visit: http://www.lehigh.edu/imi/teched/GlassProcess/GlassProcess.html, or contact Prof. Jain (120 Sinclair Lab. Phone: 8-4217; Email: h.jain@lehigh.edu).

List of planned topics

1. Melting, coloring of glass
2. Forming
   - Flat/float
   - Shaped (blown, pressed),
   - Fusion draw
3. Annealing, tempering
4. Cutting
5. Surface treatments
6. Coatings
7. Finishing (grinding and polishing)
8. Fiberglass
9. Glass-ceramics
10. Silica glass processing
11. Optical waveguides
12. Enamels and glazes, Sealing
13. Specialty glasses:
   - (a) Non-oxide/Chalcogenide glasses
   - (b) Porous glass
14. Advanced fabrication: Sol/Gel, etc.
15. Ion exchange strengthening