



**UNIVERSIDADE FEDERAL DE MINAS GERAIS**  
**ESCOLA DE ENGENHARIA**  
**Programa de Pós-Graduação em Engenharia**  
**Metalúrgica, Materiais e de Minas**

Av. Antônio Carlos, 6627 - Campus da UFMG - Pampulha  
Escola de Engenharia - Bloco 2 - Sala 2230 - Belo Horizonte - MG - CEP 31270-901  
Tel.: 31 3409-1801/3652 Fax: 31 3409-1815 e-mail: ppgem@demet.ufmg.br



## **EMT901 - Caracterização de Superfícies e Interfaces**

Análise e Caracterização de Materiais, Interfaces e Recobrimentos, Métodos de Caracterização e Análise, Métodos de Imagem, Microscopia óptica e eletrônica, Microscopia de Força Atômica, Métodos Espectroscópicos, Espectroscopia eletrônica, Vibracional e Rotacional, Técnicas de análise de superfícies, Aplicações das Técnicas de Análise de Superfícies e Interfaces, Análise de Falha e Defeitos, Processos Físico-Químicos.

Créditos: 04

Horas-aula: 60

### **BIBLIOGRAFIA**

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2. Bunshah et al, Deposition Technologies for Thin Films and Coatings, Noyes, NJ, 1989.
3. J. I. Goldstein et al, Scanning Electron Microscopy and X-ray Microanalysis, Plenum Press, NY, 1998.
4. Elements of X-ray Diffraction by B.D. Cullity (II edition), Addison-Wesley Publishing Co. Inc., Reading, USA, 1978.
5. D. Skoog and J. Leary, Principles of Instrumental Analysis, Saunders College Publ., NY, 1992.
6. H. Mantsch, D. Chapman, Infrared Spectroscopy of Biomolecules, Wiley-Liss, NY, USA, 1996.
7. Abraham Ulman, Characterization of Organic Thin Films: Surfaces, Interfaces , Thin Films, Butterworth-Heinemann, Boston, 1995.
8. Surface Analysis - The Principal Techniques by John C. Vickerman (Editor), 474 p., John Wiley & Sons; edition (July 25, 1997), ISBN: 0471972924.

9. Handbook of Surface and Interface Analysis: Methods for Problem-Solving by J. C. Riviere (Editor), S. Myhra (Editor), 968 p., Publisher: Marcel Dekker; (January 27, 1998) ,ISBN: 0824700805.

10. Surface Analysis Methods in Materials Science, by D. J. O'Connor (Editor), B. A. Sexton (Editor), R. St. C. Smart (Editor), Hardcover: 586 pages ; Publisher: Springer Verlag; 2nd edition (August 15, 2002), ISBN: 3540413308.

11. Atomic Force Microscopy / Scanning Tunneling Microscopy, S.H. Cohen and Marcia L. Lightbody (Editors), Plenum Press, New York, 1994.

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Periódicos: Materials Characterization; Polymer; Materials Chemistry and Physics - Elsevier; Journal of Materials Science; Nanoscale Research Letters - Springer; ACS journals; RSC journals;