UNIVERSIDADE ESTADUAL DE CAMPINAS
INSTITUTO DE QUÍMICA

PROGRAMS AND BIBLIOGRAPHY

Subject	
Code	**Name**
QF853	Rheology of Colloidal Systems

Vector
OF:S-5 T:002 P:000 L:000 O:000 D:000 HS:002 SL:002 C:002 AV:N EX:S FM:75%

Pre requisite	None

Summary

Introduction to rheology. Definition of fundamental rheological parameters such as deformation, tension, and shear rate.
Elasticity and viscosity. Linear and nonlinear viscoelasticity of colloidal systems from the phenomenological and microscopic perspectives.
Instrumentation aspects of rheology of colloidal systems: theory and practice.

Program

Colloidal systems: polymeric, dispersions, based on surfactants; complementary techniques used for the characterization of colloidal systems (static and dynamic light scattering, neutron scattering, zeta potential); fundamentals of rheology; the linear regime; the nonlinear regime; rheology of polymeric solutions, dispersions, and surfactant aggregates, organogels, liquid crystals.

Bibliography

1. Goodwin, J.W. and Hughes, R.W. Rheology for Chemistry RSC.
2. Macosko, C.W. Rheology - Principles, Measurements, and Applications Wiley-VCH.
3. Larson, R.G. The Structure and Rhelogy of Complex Fluids, Oxford University Press.

Evaluation criteria

Evaluation criteria are defined by the Instructor on the bases of Section I – General Norms, Chapter V – Student Evaluation in the Subject, from the General Undergraduate Regiment.
Attendance: 75 % (* Allowance for non-attendance will be considered according to Chapter VI, Section X, article 72 from the General Undergraduate Regiment).