



----- Mensagem encaminhada -----

Assunto:[Posgraduacao] Disciplina Eventual de Pós-Graduação - QP426 - Tópicos Especiais em Química Orgânica IV (Turma O) - Prof. Dr. Albert Baldoire Moyano - Universidade de Barcelona, Espanha
Data: Thu, 31 Oct 2019 15:14:19 -0300
De: Assessoria de Comunicação - IQ/Unicamp <comuniq@unicamp.br>
Para: posgraduacao@iqm.unicamp.br

Prezados alunos,

Informo que, nos dias **02, 03 e 04** de dezembro das 14h às 17h e nos dias **05 e 10 de dezembro das 9:00 às 12:00h** será oferecida a **disciplina eventual** de Pós-Graduação **QP426 - Tópicos Especiais em Química Orgânica IV** (Turma **O**), totalizando 15 horas (1 crédito) com o tema "Chiral Technology in The Chemical & Pharmaceutical Industry" ministrada pelo **Prof. Dr. Albert Baldoire Moyano** da Universidade de Barcelona, Espanha. As aulas ocorrerão na sala IQ-16 e serão ministradas em inglês.

Anexo Informações sobre a disciplina.

- Os alunos interessados deverão preencher o formulário do [LINK](#) (não esquecer de clicar em "adicionar disciplina" para inserir o código e turma) e enviá-lo para o e-mail cpgiq@unicamp.br, assinado e escaneado, no período de **01 a 20 de Novembro**.

Atenciosamente,

Diego Banhos
Coordenadoria de Pós-Graduação
Instituto de Química - UNICAMP

| |
|---|
| Course Title: Chiral Technology in the Chemical & Pharmaceutical Industry |
| Notional Learning Hours (a) Contact Time - 15 h (b) Private Study - 30 h Format of Teaching: Lectures 15 h Teaching Strategy: 5 x Formal lectures & discussion in 150 min |
| Professor: Albert Moyano Full Professor of Organic Chemistry, Department of Inorganic & Organic Chemistry, University of Barcelona, Spain |
| Language of Tuition: English |
| Course Description - The Purpose or Aims: To provide the students with an overview of the main strategies used in the chemical and pharmaceutical industry to generate chiral drugs, pesticides, food additives and perfumeries as single enantiomers. |
| Specific Learning Outcomes for this course: At the end of the course the student is expected to be able to: L01 To understand the basic assumptions and principles of chiral technology L02 To know the most important methods for the resolution of racemates L03 To master most relevant techniques of asymmetric synthesis susceptible of industrial application |
| Summary of Course Contents: Chiral technology: introduction. Reminder of basic stereochemical concepts. The nature of chirality. The need for enantiomerically pure drugs and pesticides. Basic assumptions of chiral technology. The growing importance of chiral technology. Summary of the techniques for obtaining single enantiomers: Nonselective synthesis and resolution of racemates, asymmetric synthesis. Kinetic resolution & dynamic kinetic resolution. Enzymatic and chemical methods. Selective liquid-liquid extraction. Membrane separation. Formation of diastereomers and crystallization (classical resolution). Direct resolution of racemates by crystallization. Resolution by preparative chromatographic methods. Biotechnology. Asymmetric synthesis by fermentation. Chiral building blocks: The chiral pool. Asymmetric synthesis with chiral auxiliaries and chiral reagents. Asymmetric catalysis: Basic principles of asymmetric catalysis. Absolute asymmetric synthesis. Specific examples of catalytic asymmetric synthesis with industrial applications. Process development in asymmetric catalysis. Decision tree for rational selection of process for production of pure enantiomers. Case study & discussion of selected chiral processes in the chemical industry. |
| Assessment Criteria: <u>Threshold:</u> L01, To identify correctly chiral molecules, stereogenic elements, stereoisomers, chiral nomenclature. L02 and L03. To understand the basic principles of resolution of racemic mixtures and of asymmetric synthesis. <u>Good:</u> L01, To master the principles and applicability of the main analytical methods for the determination of stereochemical composition. To identify the factors responsible for the present growth of chiral technology. L02 and L03. To discuss the most important industrially applicable methodologies of resolution of racemic mixtures and of asymmetric synthesis. <u>Excellent:</u> L01, To be able to provide examples of the different techniques used for obtaining single enantiomers of chiral compounds. L02 and L03. To be able, for a given chiral molecule, to propose large-scale methods for its preparation in enantiomerically pure form. |
| Resource Implications: Lecture notes and copies of the most relevant bibliographic sources in English will be available for students |