

Pre meeting Courses

ISTA 18

SHORT COURSE (1)

Synthetic Dyes - Structural, Chemical, and Environmental Properties, Harold Freeman, NCSU, USA

Local: FACULDADE DE TECNOLOGIA DE LIMEIRA (UNICAMP)

Dates: 14 -15th July 2017

Period: 1st day, 8-17h

2nd day, 9-12h

Number of participants: 30

Registration: R\$ 100,00 per participant

Description:

In this short course, we cover topics pertaining to the molecular and toxicological properties of organic dyes. Emphasis is placed on the structures and chemical and physical properties of dyes for each type of textile fiber (cotton, polyester, nylon, etc.). The opening lecture covers the bases for the color of dyes and their coloration of textile fibers and the chemical and physical mechanisms associated with textile dyeing. This is followed by a series of lectures providing an overview of the technical properties of the important classes of textile dyes, along with factors governing the selection of individual colorants for specific end uses. The final group of lectures provide up to date perspectives on eco/genotoxicology and analytical chemistry of synthetic dyes.

Program (11hours)

| <u>Topics Covered</u> | <u>Time Allocated</u> |
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| What are dyes? <ul style="list-style-type: none">• Basis for color• Classifications | 60 min |
| Dyes for cellulosic fibers <ul style="list-style-type: none">• Direct, vat, sulfur, azoic, reactive dyes overview• Structure Vs. properties | 75 min |
| Dyes for polyamide fibers <ul style="list-style-type: none">• Acid, mordant, pre-metallized dyes overview• Structure Vs. properties | 75 min |

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| Dyes for acrylic fibers <ul style="list-style-type: none"> • Basic (cationic) dyes overview • Structure Vs. properties | 60 min |
| Dyes for hydrophobic fibers (polyester, acetates) <ul style="list-style-type: none"> • Disperse dyes overview • Structure Vs. properties | 75 min |
| Natural dyes <ul style="list-style-type: none"> • Structural make up • Properties and applications | 60 min |
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| Toxicology of dyes <ul style="list-style-type: none"> • Structure activity relationships • Metabolism • Test methods used • Effects of waste treatments | 120 min |
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| Analytical Chemistry of Dyes <ul style="list-style-type: none"> • Mass spectrometry • Chromatography • Absorption spectroscopy • Practical applications | 75 min |
| Visit to the Ames and Ecotox lab - LEAL | 60 min |