

Área: **ORG**
(Inserir a sigla da seção científica para qual o
resumo será submetido. Ex: ORG, BEA, CAT)

Analysis of Chirality in Organic Solutions via Polarimetry

Paola Carolina de Souza Beltrame (IC),¹ David Velasco Villamizar (PQ).¹

pdesouzabeltrame@gmail.com; david.velasco.v@gmail.com

¹Universidade Estadual do Oeste do Paraná, UNIOESTE, Toledo, Paraná, Brasil.

- Palavras Chave: *Quiralidade, Atividade Óptica, Polarimetria, Dispersão Óptica Rotatória, Ensino de Física, Ensino de Química.*

Highlights

Low-cost interdisciplinary didactic proposal for teaching chirality/optical activity. Focuses on building a simple polarimeter to visualize ORD (rainbow effect) and measure sucrose solutions, connecting molecular asymmetry (Chemistry) with polarization/Malus' Law (Physics).

Resumo/Abstract

Chirality is a fundamental geometric property with profound implications in chemistry, biology, and pharmacy, but its physical manifestation, optical activity, can be an abstract concept for students. This work presents an interdisciplinary didactic proposal for teaching Physics and Chemistry, focused on the construction and use of a low-cost experimental apparatus to visualize and measure the optical activity of sucrose solutions. Two experiments will be described: (i) the direct visualization of Optical Rotatory Dispersion (ORD) in white light, which generates a fascinating rainbow-colored beam, and (ii) the construction of a low-cost polarimeter for quantitative analysis. The approach connects the asymmetric molecular structure (Chemistry) with wave optics phenomena, such as polarization, dipole scattering, and Malus' Law (Physics), demonstrating the potential of accessible experiments to promote meaningful and engaging learning.

Agradecimentos/Acknowledgments