

*Title:* **Developing a laboratory experience for Chemistry BSc.**

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Since last course (2018-2019), Chemistry BSc includes the fundamentals of Kinetic Chemistry in the subject Química Bàsica I. Due to this change in the study programme, it would be convenient to include a new laboratory experience in Química Aplicada II, where students would carry out a basic kinetic study in order to strengthen their knowledge of Kinetics from the previous semester.

The aim of this project is to develop a new laboratory experience for the subject Química Aplicada II of the BSc in Chemistry. The project includes the entire process: bibliographic research in order to find a suitable laboratory experience, development of the experiences in the lab to determine the appropriate conditions and writing the practice manual and the professor's manual. Since a new spectrophotometer will be used, the wording of the PNT will also be done.

The chosen laboratory experience is the kinetic study of the reaction of a food dye with household bleach. The detection method is UV-Visible spectroscopy. The kinetics of the reaction of several food dyes (Erythrosine, Brilliant Blue, Tartrazine, Allura Red and Sunset Yellow) with bleach has been studied at various temperatures.

The kinetic studies of the reactions of Tartrazine, Allura Red and Sunset Yellow with bleach have been rejected, as their kinetic behaviour is complex for first-year students.

The kinetic study of Erythrosine and Brilliant Blue presents unambiguous results. The reaction orders for both reactions and both reactants is 1. The activation energy of the reaction of Erythrosine with bleach is 39 kJ/mol. The activation energy of the reaction of Brilliant Blue with bleach is 24 kJ/mol. This laboratory experiment fulfils our requirements for a first-year chemical kinetics experience.

The laboratory manual, the professor's manual and PNT have been worded according to the University's standards.

**Keywords:** Chemistry laboratory experiences, teaching skills, ApS.