Computer-assisted Chemical Kinetics

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Kinetic experiments often require major setups or a great deal of complexity in terms of experimentation. The proposed experiment as part of this activity is simple and can be easily reproduced. It also enables students to further explore concepts learned during the theoretical course.

Phenolphthalein is a common indicator for acid-base titration. In previous uses, students observed that the pink colour produced during titration faded after a few minutes. In this activity, students will track the rate at which the colour of phenolphthalein changes in alkaline solution, using a spectrophotometer connected to a computer.

Students use varying concentrations of NaOH for the same concentration of phenolphthalein. They compare their results against the theoretical aspects presented in class. During the laboratory session, the teacher hands them a scientific article about this experiment, and invites them to compare their results to those in the article.

The experiment also enables students to explore the effect of temperature.