

Abstract

System dynamics of hydrogen peroxide reaction – David Kessler

Encouraged by my interest in the mathematical-chemical field, I came across the concept of system dynamics. As this concept is not being addressed during regular chemistry classes, but on further consideration is found to be highly useful and nevertheless not all too complicated, the overall aim of this paper was formed.

The main goal was to apply system dynamics to a simple reaction, the hydrogen peroxide reaction, and then in view of the outcome to decide whether system dynamics could and should be part of the chemistry curriculum.

In order to accomplish these targets mentioned above, several measurements were conducted in the laboratory from which important data for the simulation could be obtained.

After having constructed the simulation, the values gained from the measurements could be used in it, which resulted in a comparison curve.

By comparing the curves, it was found that, when working with simulations, it is more demanding than expected to obtain a correct result. Nonetheless, it aids understanding some fields in more depth. Thus including system dynamics in the chemistry curriculum can be supported on condition that a certain introduction is provided and that it is only targeted at students with chemistry as a core option.

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