Virtual Experiments in Food Processing for an Enhanced Education

Background of the presentation:

Lab-exercises in engineering education are regarded to be excellent and significant teaching tools. Unfortunately, it is not possible to bring all various exercises to conduct hands-on experiments. Therefore, the objective of this work was to create virtual lab-experiments to carry out using PCs.

Within this perspective, 27 - virtual experiments were created using a computer -programming language (Microsoft Visual Basic). All these were accompanied by Active-X programs for extended interactive graph (Pinnacle Graphic Sever V. 5.5) and spreadsheet (Tidestone Formula 1 V. 6.1) abilities including animation technologies (Macromedia Flash V. 5.0) to give the taste of a real hands-on experiment. They were designed to be installed in any PC operated under 32- or 64-bit Windows operating system and easily used by students and instructors from over 30 countries.

The innovative aspect of these virtual experiments was their eliminating the obstructive effect of not having the required equipment to conduct different laboratory exercises, letting the students create different approaches, being easy and intuitive to carry out, and learning how to organize and analyze the experimental data. The users had opportunity to study what-if questions through the virtual experiments and observe the effects of changes of different parameters on the results.