



*Chemistry Software
from the
Spectroscopy Society of Pittsburgh*

The Spectroscopy Society of Pittsburgh (SSP) operates a distribution center for selected chemistry software from Dr. Victor Bendall, formerly of Eastern Kentucky University. Educators can obtain this chemistry software through the SSP for the cost of the blank media or free of charge by using their own media. The SSP pays Dr. Bendall a copying fee for the right to distribute the software in this way. The software runs on PC's only and comes with a Site License so it can legally be installed on all computers at your school. See the second page for descriptions of Dr. Bendall's software programs.

JOURNAL OF CHEMICAL EDUCATION WEB-BASED SOFTWARE

The SSP will provide high school chemistry teachers with a one-year Individual or Institutional Subscription to the Journal of Chemical Education Web-Based Software site, *ChemEd Xchange*, which contains a wide variety of programs useful in chemistry classes. Send to the address below for the form that must be completed to receive either type of subscription. Indicate the type of subscription you want.

CHEMED DIGITAL LIBRARY

The ChemEd Digital Library is a free, open-source site with a wide variety of software useful to any chemistry teacher or student. No password is required for this site. You can access any of the software on the site at <http://www.chemeddl.org>

Send to the address below to request any of this software.
Indicate specifically what you are requesting.

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ChemSimLab

Dr. Victor Bendall wrote many chemistry simulation programs for the original Project SERAPHIM PC collection. However, these programs were all written in DOS at a time when processors were much slower than they are today. As a result, the programs did not work very well with modern PC's. Dr. Bendall has updated these simulations for the Windows environment and they are now all available on a single CD titled ChemSimLab. Each simulation must be installed individually on a computer's hard drive and then will run without the CD. They each include teacher and student files/instructions. The titles and a short description of each simulation is below:

BackTiter. This simulation demonstrates the use of Back Titration to find the composition of a mixture.

BombCal. Here, the user determines the heat of combustion of an organic unknown using a simulated bomb calorimeter.

Boyle. This is a simulation of the famous experiment of Robert Boyle that showed the relationship between Pressure and Volume of a fixed mass of gas at constant temperature.

BuCl. This is a simulation of a determination of the Rate Law for the hydrolysis of t-Butyl chloride.

Charles. In this simulation, the relationship between Volume and Temperature of a fixed mass of gas at constant pressure is determined.

Chloride. This is the titration part of **Formula**. Students weigh a sample of potassium chlorate in the lab and heat it to constant weight as in **Formula**. Then, they use **Chloride** to titrate the residue to determine the Cl concentration.

Conductivity. What determines whether a substance is a good or bad conductor of electricity? This simulation allows the user to measure the conductivity of a variety of solids and liquids.

Dumas. This is the determination of the molecular weight of a volatile liquid by vapor density measurements.

ElectroDep. The equivalent weight of a metal is found by electrolysis of a metal salt, weighing the metal deposited and measuring the number of coulombs of electricity passed.

Faraday. This is an electrolysis of an aqueous solution where hydrogen and oxygen are generated and collected. From the data, a value for the Faraday can be determined.

Formula. The Empirical Formula of Potassium Chlorate is determined in this simulation.

Graham. The relative speeds with which different gases migrate along a tube are determined here.

IceCal. When zinc is reacted with acid, heat is liberated and, in this simulation, is used to melt ice.

Osmom. This is a discovery expt. The user can determine the factors that control the Osmotic Pressure of a solution.

PaperChrom. This simulation is of the procedure for separating a mixture of dyes by paper chromatography.

Rast. The determination of molecular weight by freezing point depression is the subject of this simulation.

Reactivity. The factors that affect the rates of reactivity of metals with acid are simulated in a qualitative manner.

RGas. A metal is dissolved in acid and the hydrogen gas that evolves is collected. From the volume of gas, the equivalent weight of the metal is calculated.

SixSolut. The student is shown six colorless solutions which each contain a different compound. They are asked to identify the dissolved substance in each solution by mixing them together and noting the results.

Solubility. The procedure for the determination of the solubility of sodium chloride in water is simulated. Like **PaperChrom**, this simulation is best suited as a pre-lab exercise before the true expt. is performed by the student.

Transport. The Transference Number of the proton is determined by the moving boundary method.

Vinegar. This is a simple titration experiment where the user determines the percentage of acetic acid in vinegar. The sample is weighed and titrated with standard sodium hydroxide.

Ogre 2

OGRE2 is a completely revised version of a program originally written for DOS. It is intended to help first year Organic Chemistry students with Synthetic Reactions and their Mechanisms. The program is keyed to numerous Organic Chemistry textbooks, but can also be used alone and organized by Functional Group. There is a total of 1300 questions in the test bank.

These two programs can be obtained by either sending a blank CD-R or \$1.00 to the address on the front side of this page. Both programs will fit on a single CD-R. Once obtained, the programs can be freely installed on any computers at your institution. You, in effect, get a site license along with the CD