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ChemPages Laboratory

Abstract of Special Issue 24 on CD-ROM

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The ChemPages Laboratory CD-ROM uses text, images and video to clearly explain over 30 common laboratory techniques and items of equipment. Each technique or piece of equipment is organized as a module. Developed in HTML for use as prelab assignments for beginning chemistry courses, the modules are viewed using an Internet browser. Because the operation of the browser is familiar to most students, they are able to focus their attention on the material, not on how to use the software.

The modules have been designed so that students can efficiently access relevant material. Each module consists of the major steps involved in the laboratory procedure described. An outline is presented on a navigation menu along the left-hand side of the screen. Each page of the module contains a text description and one or more images or video clips. Most modules close with a self-test to help students evaluate their knowledge of the procedure.

Each module has been carefully written to avoid specific references to any particular experiment or to a specific brand or model number. Thus, the modules focus on the principles of the technique. One example is the measurement of the volume of a liquid with a graduated cylinder. The module discusses the methods of reading the meniscus on a generic graduated cylinder. Several sizes of graduated cylinders are presented. The description of the technique is applicable to a graduated cylinder of any size.

Images and video are incorporated throughout ChemPages Laboratory to allow students to recognize unfamiliar equipment and to observe the proper handling of each piece of equipment. The video clips include voice-over descriptions and explanations of each technique, so that students can hear as well a read about the procedure. By studying the video clips prior to attending a laboratory session, students can observe techniques or manipulations that may be unclear because they were unfamiliar with the language of the laboratory.

The ChemPages Laboratory modules have been highly effective in preparing students for laboratory when coupled with pre-laboratory quizzes. Students are better prepared and more independent after using ChemPages Laboratory.

The ChemPages Laboratory materials are general enough to be used with a wide variety of experiments. The modules are complete enough to be used independently, but should

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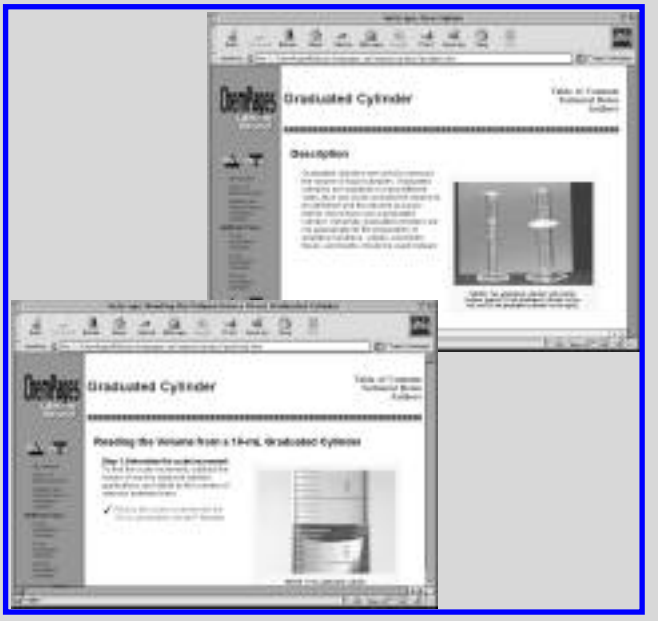
Prelab Modules
ChemPages Laboratory

Bulb, Standard	Barometer
Chart Recorder	Centrifuge
Chromatography, Gas	Gas Burner
Chromatography, Paper	Balance
Chromatography, Thin Layer	Scales
Calorimeter, Coffee Cup	Mixing
Conductivity Meter	pH Meter
Electrochemical Cells	pH Paper
Flask, Volumetric	Pouring
Pipet, Volumetric	Pipet, Mohr
Filtration, Gravity	Thermometer
Hot Plate/Magnetic Stirrer	Graduated Cylinder
Separatory Funnel	Melting Points
Spectroscope, Hand-Held	Titration
Spectrometer, Spectronic 20™	Buret
Spectrometer, Scanning UV–Visible	Bulb, 3-Way



Still images enhance learning in the Graduated Cylinder Module.

be supplemented by a printed manual (or HTML manual with links to relevant ChemPages modules) that describes local variations or gives specific references to experiments to be performed. However, the manual need not describe how to carry out laboratory procedures because that information is included in the ChemPages. This is particularly valuable for discovery-oriented experiments where students are expected to design their own procedures.

Web Ready

ChemPages Laboratory is another "Web Ready" publication from *JCE Software*. Developed in HTML format, Web Ready publications are ready to deploy on your WWW server. Licenses to distribute Web Ready titles on the WWW are available. Please contact us for terms and pricing.

Price and Ordering

An order form is inserted in this issue that provides prices and other ordering information. If this insert is not available or if you need additional information, contact: *JCE Software*, University of Wisconsin–Madison, 1101 University Avenue, Madison, WI 53706-1396; phone: 608/262-5153 or 800/991-5534; fax: 608/265-8094; email: *jcesoft@chem.wisc.edu*.

Information about all our publications (including abstracts, descriptions, updates) is available from our World Wide Web site at

http://jchemed.chem.wisc.edu/JCESoft/

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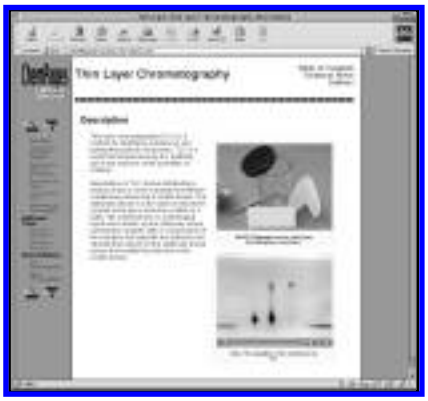
Hardware and Software Requirements

Hardware and software requirements for ChemPages Laboratory are found in Table 1.



A still image shows equipment and a time-lapse QuickTime movie shows separation of two substances. From the Thin Layer Chromatography Module.

Availability and Sources of Video

ChemPages Laboratory was developed using video and still images from *JCE Software's* Chemistry Comes Alive! (CCA!) collection. CCA! is a series of CD-ROMs that contain a wide range of imagery suitable for use in multimedia presentations, lessons, and HTML documents. We encourage you to use CCA! as a source for high quality imagery for your own presentations. If you do, let us know how you use *Chemistry Comes Alive!* in your classroom. We will share contributed ideas, lessons, or instructional materials that utilize *Chemistry Comes Alive!* with others. Remember to obtain a license before you distribute images or video from CCA! on a network or the World Wide Web. Please call, write, email, or visit JCE Online for more information.

JCE Software has more great video in the CCA! collection that has not yet been published on CD-ROM. Much of the video included in ChemPages Laboratory, for example, has not been published previously. If you need video of chemistry (chemical reactions, demonstrations, laboratory procedures) not yet published, contact *JCE Software*. If we have what you need in our collection, we can make arrangements for you to use it. If we do not have suitable video, we may be able to assist you in creating it.

Table 1. Hardware and Software Requirements for ChemPages Laboratory

Computer	CPU	RAM	Drives	Graphics	System	Other Software (Included)	WWW Browser (Not Included)
Mac OS Compatible	PowerPC; ≥ 150MHz recommended	32 MB	≥ 4 × CD-ROM; Hard disk	≥ 800 × 600; thousands or millions of colors	System 7.6.1 or higher	QuickTime 4	Netscape Navigator 4.0 or higher OR Microsoft Internet Explorer 4.0 or higher
Windows Compatible	Pentium; ≥ 150MHz recommended	32 MB	≥ 4 × CD-ROM; Hard disk	≥ 800 × 600; 16-bit or 24-bit color	Windows 98/95	QuickTime 4	Netscape Navigator 4.0 or higher OR Microsoft Internet Explorer 4.0 or higher