



Digital Resources for Chemistry Teachers and Students

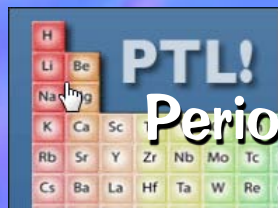
AAAS, Washington, DC, 21 February 2011



John W. Moore
University of Wisconsin-Madison

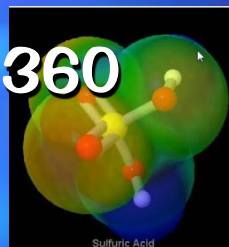


Top Resources

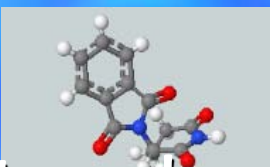


Periodic Table Live!

Models 360



ChemTeacher



Stereochemistry Tutorial



Virtual Laboratory




Courses



Web Software

VIPEr



ChemPRIME
ChemPaths



Science for Kids

Murder Mystery



<http://chemeddl.org/>



Periodic Table Live!



- Videos: reactions of elements with air, water, acids, bases
- Interactive structure models
- Uses and discovery of elements
- Physical and atomic-scale properties
- Graph any property vs any other property
- Sort properties to find maxima and minima
- Chemical glossary

The screenshot shows the 'Periodic Table Live!' website interface. At the top, there is a navigation bar with links for 'About PTL!', 'Chart/Sort', 'Biographies', 'Glossary', and 'Preferences'. Below the navigation bar is a title bar 'Periodic Table Live!' and a sub-header 'Periodic Table'. The main content area features a periodic table where elements are color-coded: purple for non-metals (including noble gases), light blue for main group metals, dark blue for transition metals, and orange for metalloids. A legend below the table explains this color-coding. At the bottom of the page, there is a copyright notice: 'Copyright © 1995, 1997, 1999, 2004, 2010 by Division of Chemical Education, Inc.'

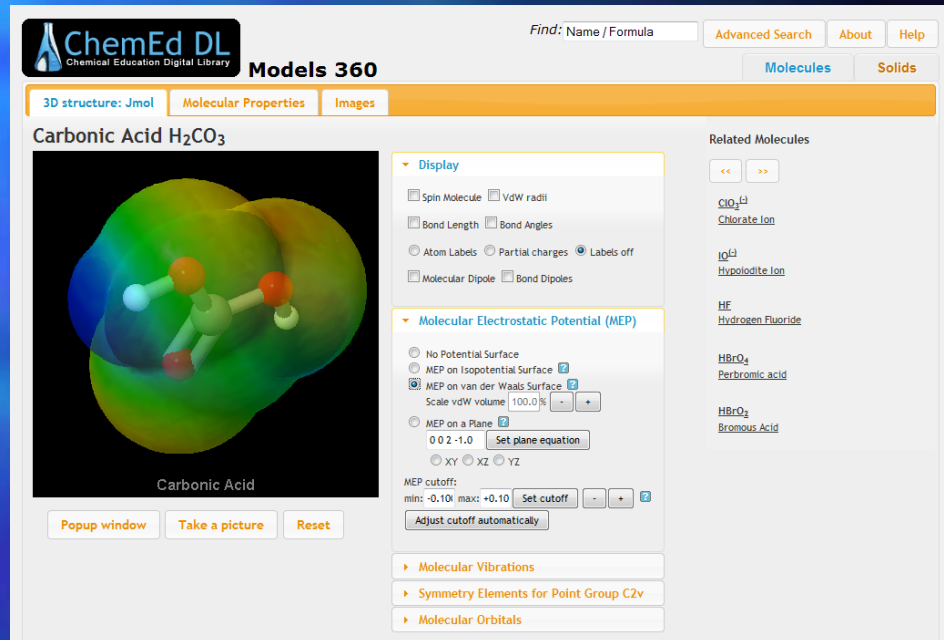


<http://chemeddl.org/>



Models 360

- Structures of more than 700 molecules in interactive, Jmol format
- Display bond lengths, angles; atomic radii; dipoles; electrostatic potential
- Animate molecular vibrations; relate to infrared spectra
- Display molecular orbitals, HOMO, and LUMO
- Superimpose symmetry elements on molecular structures and manipulate



ChemEd DL
Chemical Education Digital Library

Models 360

Find: Name / Formula [Advanced Search](#) [About](#) [Help](#)

[Molecules](#) [Solids](#)

3D structure: Jmol [Molecular Properties](#) [Images](#)

Carbonic Acid H_2CO_3

Carbonic Acid

Display

Spin Molecule VdW radii

Bond Length Bond Angles

Atom Labels Partial charges Labels off

Molecular Dipole Bond Dipoles

Molecular Electrostatic Potential (MEP)

No Potential Surface

MEP on Isopotential Surface

MEP on van der Waals Surface

Scale vdW volume 100.0%

MEP on a Plane

0 0 2 -1.0

XY XZ YZ

MEP cutoff: min: -0.10 max: +0.10

[Molecular Vibrations](#)

[Symmetry Elements for Point Group C2v](#)

[Molecular Orbitals](#)

Related Molecules

[ClO₃⁻](#)
[Chlorate Ion](#)

[IO₃⁻](#)
[Hypodite Ion](#)

[HF](#)
[Hydrogen Fluoride](#)

[HBrO₃](#)
[Perbromic acid](#)

[HBrO₂](#)
[Bromous Acid](#)

ChemPRIME



- Wiki-based General Chemistry textbook
- Users can contribute and edit sections, chapters
- Exemplars: chemistry in
 - Geology
 - Physics and astronomy
 - Everyday life
 - Foods
 - Biology
 - Culture
 - Environmental chemistry/sustainability
 - Sports, physiology, and health

A screenshot of the ChemPRIME website. The page has a white background with a blue header. On the left, there is a navigation menu with links like "Main Page", "Site News", "Collaboration", "Student Assignments", "Recent changes", "Random page", "ChemEd DL", "Find Resources", and "Help". Below this is a search box with "Go" and "Search" buttons, and a "toolbox" with links like "What links here", "Related changes", "Upload file", "Special pages", "Printable version", and "Permanent link". The main content area features the ChemPRIME logo, the title "The Chemistry Behind Your Favorite Subject", and sections for "What is ChemPRIME?", "Collaborating with ChemPRIME", "Student Assignments", and "Authors". A large NSF logo is centered below these sections. At the bottom, a text box states: "This material is based upon work supported by the National Science Foundation under Grant No. 0837607." On the right side, there is a table of contents for the "ChemPRIME" project, listing 20 chapters with expand/collapse icons.



<http://chemeddl.org/>



ChemPaths



- Portal/delivery system for ChemPRIME content
- Users can create paths through chemistry content, defining specific textbooks for individual courses
- Can sample ChemPRIME at a specific time so the textbook remains static during a course
- ChemPaths has been used in four different course offerings at UW-Madison

Font-size: [bigger](#) [smaller](#) [reset](#)

ChemPaths
Learning to Meander

Student Resources for General Chemistry

Home | Periodic Table Live! | GenChem Textbook | Quick Resources | Tools

Username: Password: Login

Google Custom Search Search

A project of the... **ChemEd DL** Chemical Education Digital Library

Home
How Do I Use This Site?
GenChem Textbook
Explore the ChemEd DL!
Course Modules:
Wave Tutorial
From Waves to Orbitals
UW-Madison Chem 109H
UW-Madison Chem 104
UW-Madison Chem 109 2010

WELCOME TO CHEMPATHS!

Last Updated (Sunday, 23 August 2009 13:07)
Written by Administrator

This site is the Student Access Portal of many of the Chemistry Education Digital Library collections! ChemPaths is the Student Portal of the Chemical Education Digital Library (The ChemEd DL), and has been built to assist instructors in providing a means to bring all of these multimedia resources into one cohesive package ready for student-use. Some things you can see while you look around:

To the left are **Course Modules** which you can use to go over various topics in General Chemistry. If your instructor has sent you here, those are likely where you were told to go. The first tutorial, *Wave*

[Add this page to Diigo!](#)

Who's Online
We have 16 guests online

Helping 495,965 chemistry students so far!

Latest News

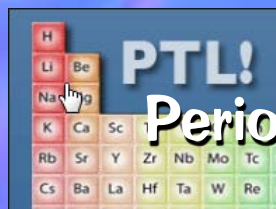
[Welcome to Chem 104!](#)
[Welcome to Chem 109!](#)
[Chem 104 - M Apr 26](#)
[Chem 104 - W Apr 28](#)



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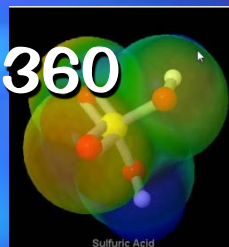


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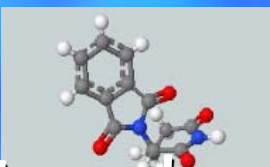


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Thanks to



- NSF: Images of Chemistry, MDR-9154099
New Traditions Curriculum, USE-9455928
NSDL: JCE DLib, DUE-0226244
ChemEd DL, DUE-0632303,
DUE-0938039, DUE-1044239
ChemPRIME, DUE-0837607
VIPEr, DUE-0737030
- University of Wisconsin-Madison:
Technology-Enhanced Learning Program
General Chemistry Program,
Chancellors Enhancement Fund



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