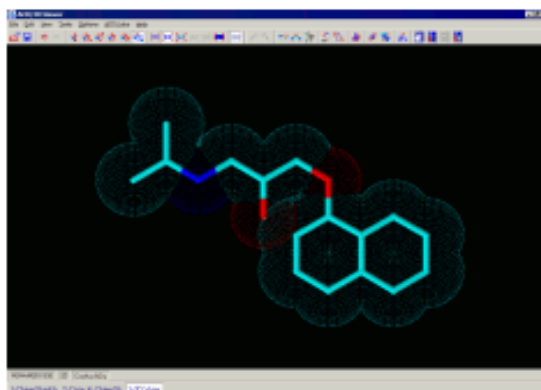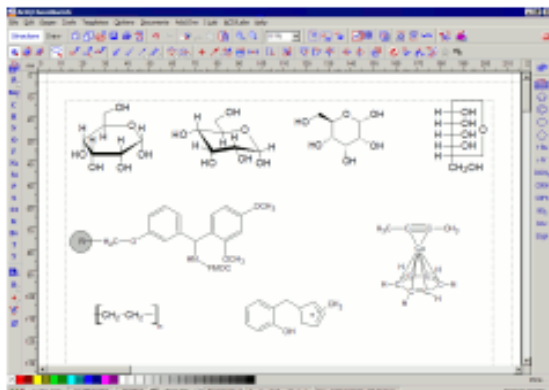# Introduction to ChemSketch

Images courtesy of ACD/ChemSketch.

Most of the things we use – furniture, cars and trains, hairbrushes, houses and organisms we interact with – insects, people, pets are all large enough for us to see with the naked eye. As we learn about our world in more detail, we learn that there are organisms that are even hundreds of times smaller than our garden spider and require a microscope to see. We learn about the dust mites, our seemingly invisible neighbors. In awe, we discover that a smooth may appear jagged and rough under the microscope, something that we could not have thought of by observation with the naked eye. Just imagine, a single cell is 10,000 times smaller than the average dog, and an atom is 100,000,000 times smaller than a single cell. Since we cannot see how an atom of hydrogen or lead actually looks like, we will use molecular visualization programs and hands-on molecular models to better understand chemistry.

In this course, we will be using ACD/Chemsketch, a free program developed by Advanced Chemistry Development, Inc., (ACD/Labs), to draw chemical structures and render or transform these structures into 3-D pictures that we can visualize.

Info Link: http://www.acdlabs.com/products/chem_dsn_lab/chemsketch/

To download Chemsketch:

1) Go to http://www.acdlabs.com/download/chemsk.html.

2) Click on the link that says:
   "**Click Here to Download ChemSketch 11.0 Freeware**"

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3) Fill out the information with the dark red diamond on the left side of the box and click on "**Submit Form**" on the bottom.

4) Check your email and follow the directions in the email to get the software.

Tutorial: Using ChemSketch

To add a bond

To add any atom
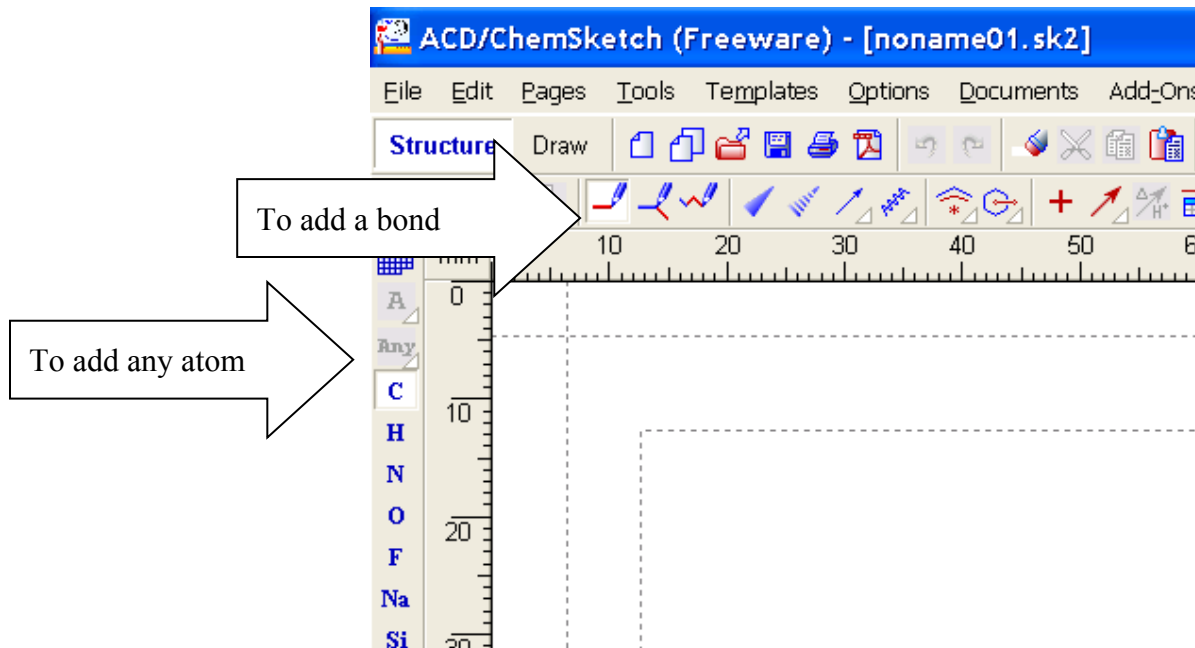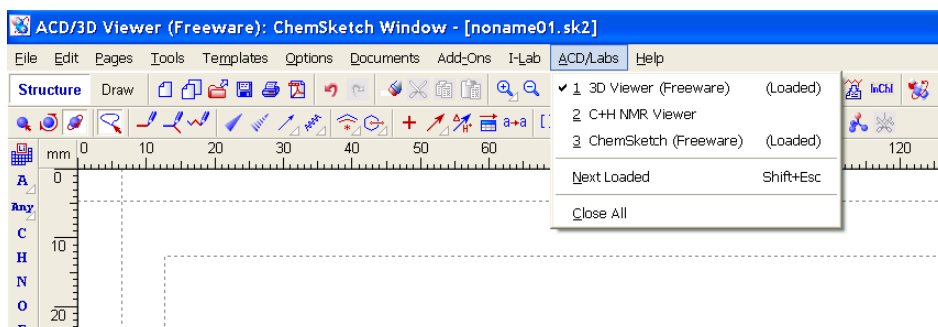
1. Click on the letter of the first atom (from left side buttons) you want to draw.

2. Click on the white drawing space to put the atom there.

3. Repeat first two steps to add other atoms.

4. Click on the button with the "to add a bond" arrow pointing at it to add bonds between atoms.

To view molecules in 3D:

1. On the top menu, click on "ACD/Labs" and select "1 3D Viewer (Freeware)"

2. Click on "Tools" on the top and click on 3D optimization.

3. On the bottom of the window, click "Copy to 3D"

4. Click on 3D view to see the molecule in 3D. The molecule can be rotated with the mouse.