COMPILATION: Atomsmith software

Date: Sun, 5 Aug 2018
From: LARRY DUKERICH
Subject: Atomsmith software
Hi Folks,
Several modelers attended the 2018 Biennial Conference on Chemical Education (BCCE) at Notre Dame this week. I attended an Atomsmith workshop by Dave Doherty on Monday, then had a chance to explore the program further with Brenda Royce on Wednesday. After we sent multiple emails with concerns and suggestions to Dave Doherty, he came over to the place where we were working; we had a productive 45 minute conversation with him about the potential use of this software for Modeling Instruction in Chemistry.

Here are a few possible applications that we found, but we're sure there are more. Furthermore, Dave indicated a willingness to make some modifications that would make the software even more useful:

1. Unit 2 - Atomsmith does a nice job of showing the behavior (both ideal and real) of various gases. The user can control the number & type of particles, size of the box and the temperature. By lowering the temperature, one can observe that the gas begins to condense.

2. Unit 6 - There's an extensive molecule library with examples of everyday, biological, inorganic and organic molecules. One can view and compare structures of these in a way that has features similar to those found in Mercury software. The advantage here is that it will run in any web-enabled platform, and is easier to use.

3. Unit 12- Atomsmith shows molecules interacting via intermolecular forces (London, dipole-dipole and H-bonding) using the Molecule Library and Live Lab features; one nice feature is showing, via a graph, the potential energy of a system is lowered when the particles get closer together.

4. Units 4, 6, 10 - There are various resources for the historical development of the atomic model from animations to original scientific papers and textual readings, and an interactive Atomic Theory Timeline.

This is a subscription-based application, but the price seems very reasonable to us. You can learn more by obtaining a trial subscription at http://www.bitwixt.com