

# Flipped classroom videos, annotated slides, and Spartan computational chemistry software

Charles H. Mahler  
Department of Chemistry  
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# Three projects within my LITT proposal

1. Flipped Classroom approach in Chemistry 333 (videos to cover review material)
2. Annotating diagrams with Doceri and putting the annotations on Moodle for student use
3. New Spartan computational chemistry software assignments

# 1) Advanced Inorganic Chemistry 333: Issues

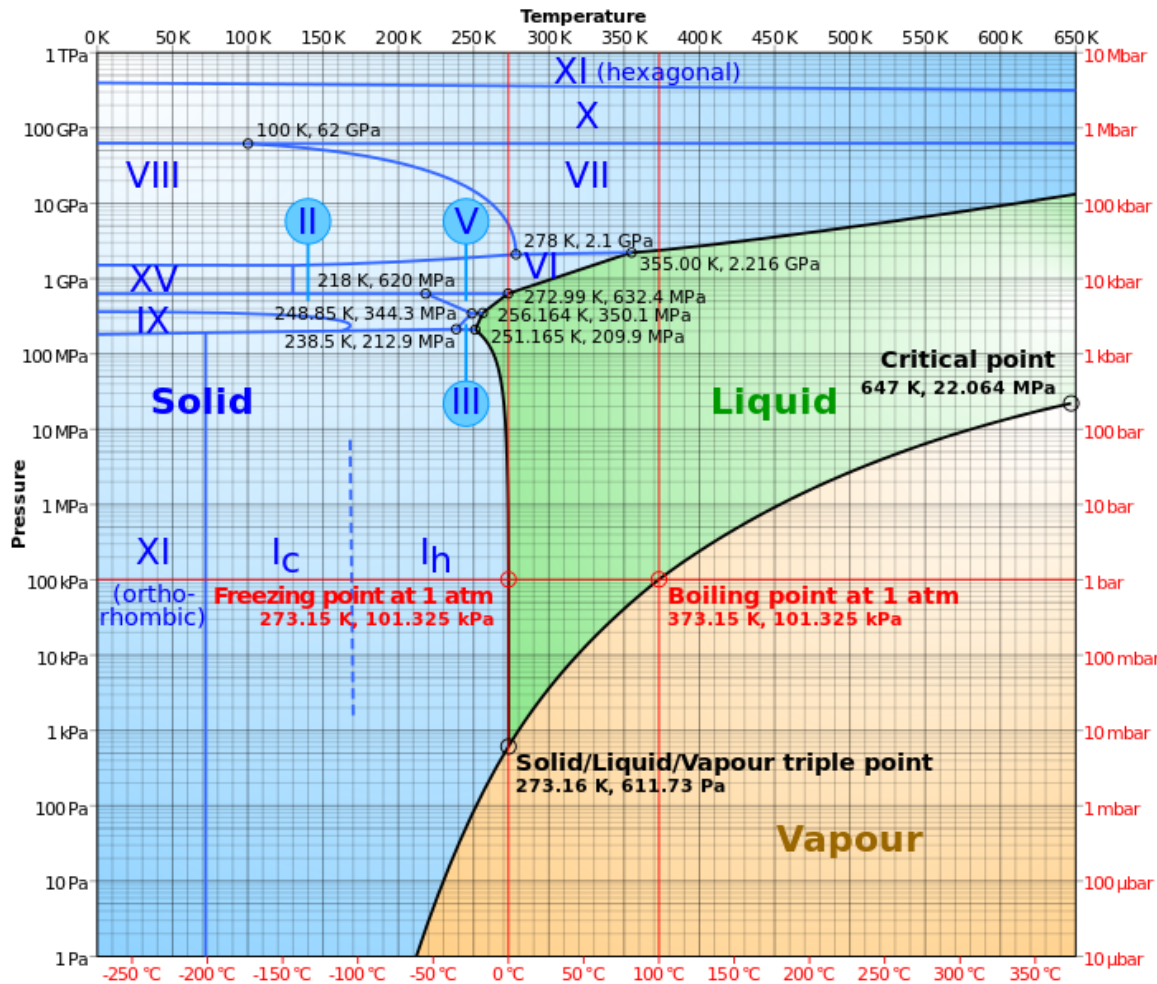
- CHEM 3333 builds on material covered in previous courses (especially General Chemistry 110-111)
- Much class time in 333 is spent on reviewing material from previous courses
- Consequently, we are not always able to cover as much new material as planned
- Some students (and the professor) are frustrated by slower pace

# 1) Advanced Inorganic Chemistry 333: Solution

- Implement a flipped classroom approach
- Have students review material from previous courses on their own time
- We can then spend class time on problem areas and new material and working problems in class
- I plan to use multiple videos to cover review material (the course is taught in the Spring semester)

## 2) Advanced Inorganic Chemistry 333 and Physical Chemistry 330-331W: Diagrams

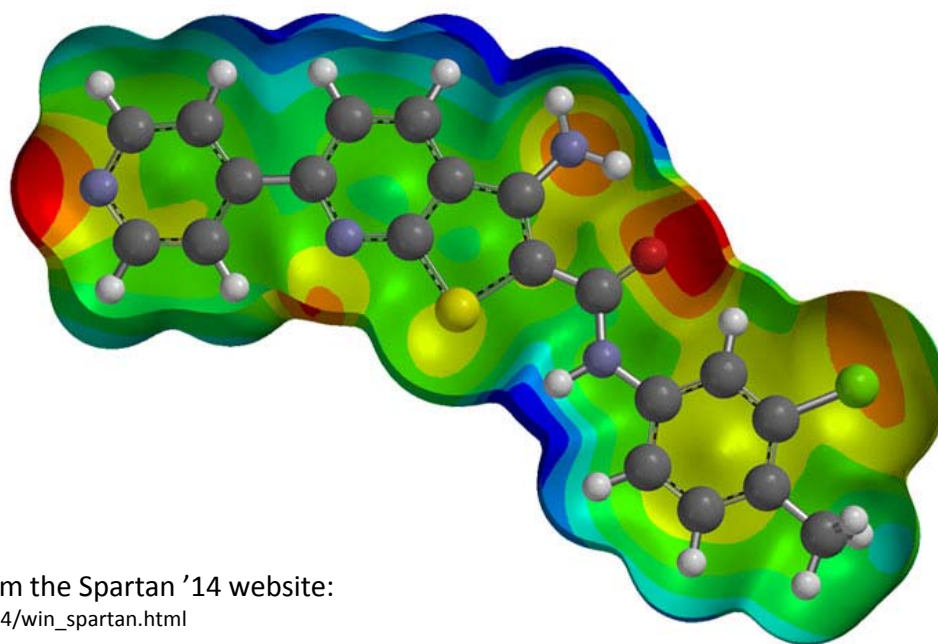
- Issue: Detailed diagrams and figures used in these classes, have been projected onto a white board and annotated with colored markers
- It can be difficult for students to take notes that reflect what I write on the diagrams and figures
- Solution: Use Doceri to annotate the diagrams electronically and save the annotations to Moodle for student use and reference



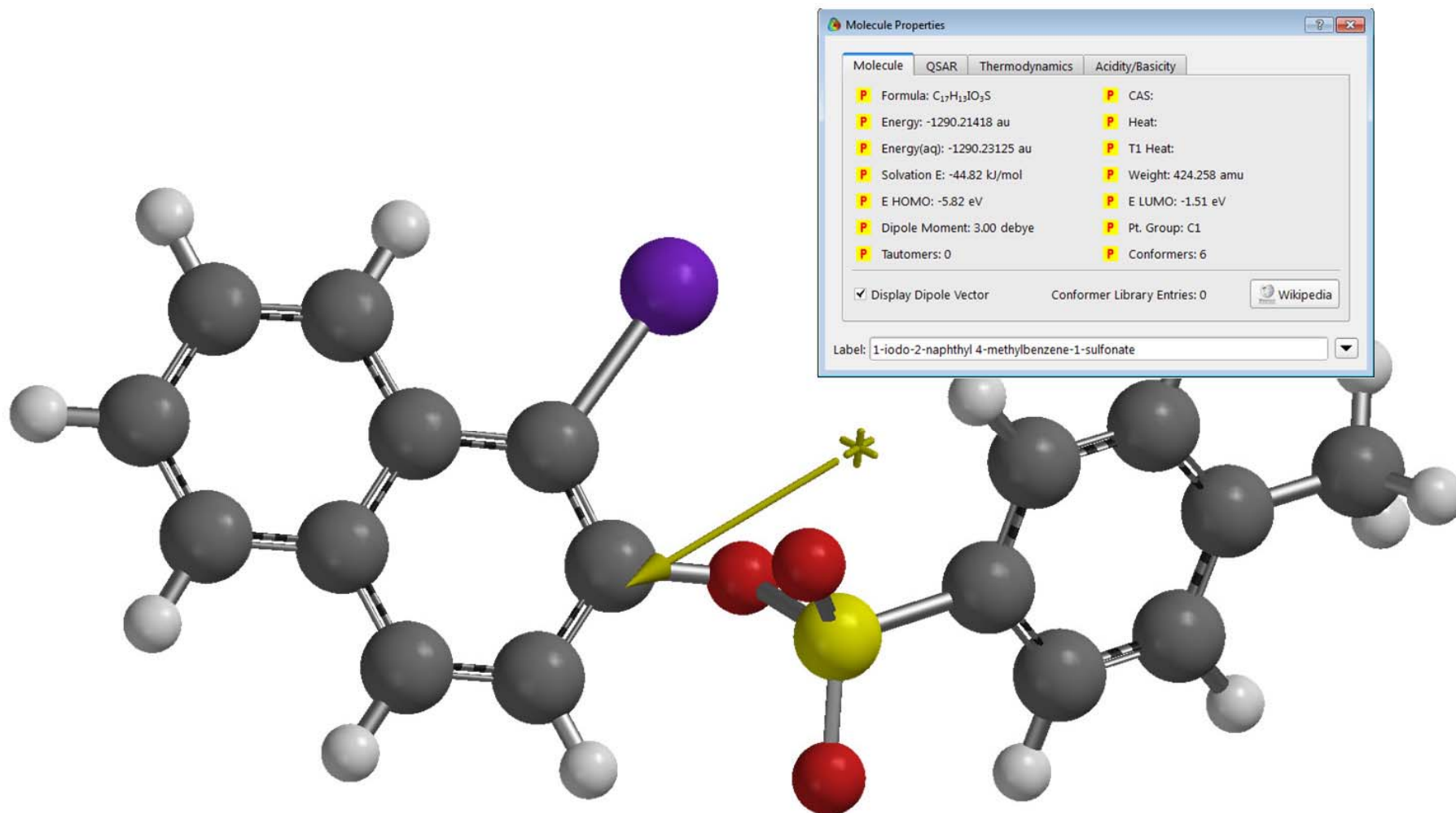
A sample complex figure: the phase diagram of pure water showing multiple solid phases and triple points (used in Physical Chemistry I 330)

### 3) Spartan Computational Chemistry Software

- New versions of Spartan allow for new computational chemistry experiments in Physical and Advanced Inorganic Chemistry classes



Images on this and the next slide taken from the Spartan '14 website:  
[https://www.wavefun.com/products/windows/Spartan14/win\\_spartan.html](https://www.wavefun.com/products/windows/Spartan14/win_spartan.html)



Molecular Properties Available from Convenient Dialogues