

# CHEM 1311

## Getting Started

- Organizational stuff
  - Syllabus, Website/WebCT
  - Melton
  - Groups
- First Quiz – Friday August 25
  - Last 15 minutes of class period
  - Three questions
    - (1) atoms (2) periodic table (3) definitions

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## Atoms

- Chemistry is about breaking and forming bonds between atoms
- Have you seen an atom?
- What experimental evidence do you have that should cause you to affirm that atoms are real?
- What is the definition of an atom? In your text? In your mind? In Melton's mind?

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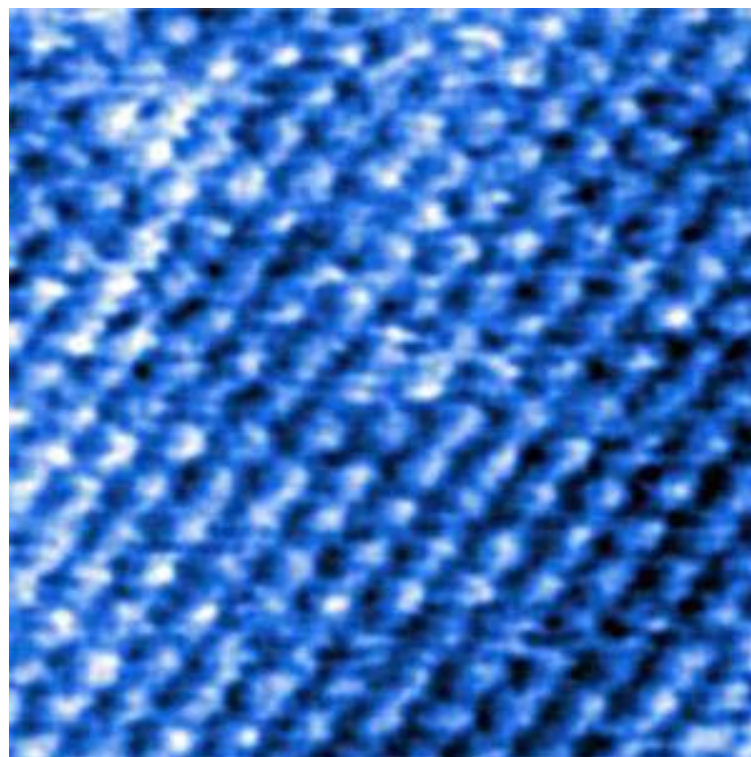
## Atoms

- What is Melton's definition of an atom?
  - Rip any piece of the world apart, but you may use only the energies available to the ancients – horses, flames, and lightning. When you cannot rip the smaller pieces apart any further (to produce only neutral particles) then those last (neutral) particles are ATOMS.
- Concepts
  - The world is granular; energy is important.

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## A granular world

- Atomic Force Microscopy
- Surface of a crystal of table salt
- Is the microscopic world granular or continuously dividable?



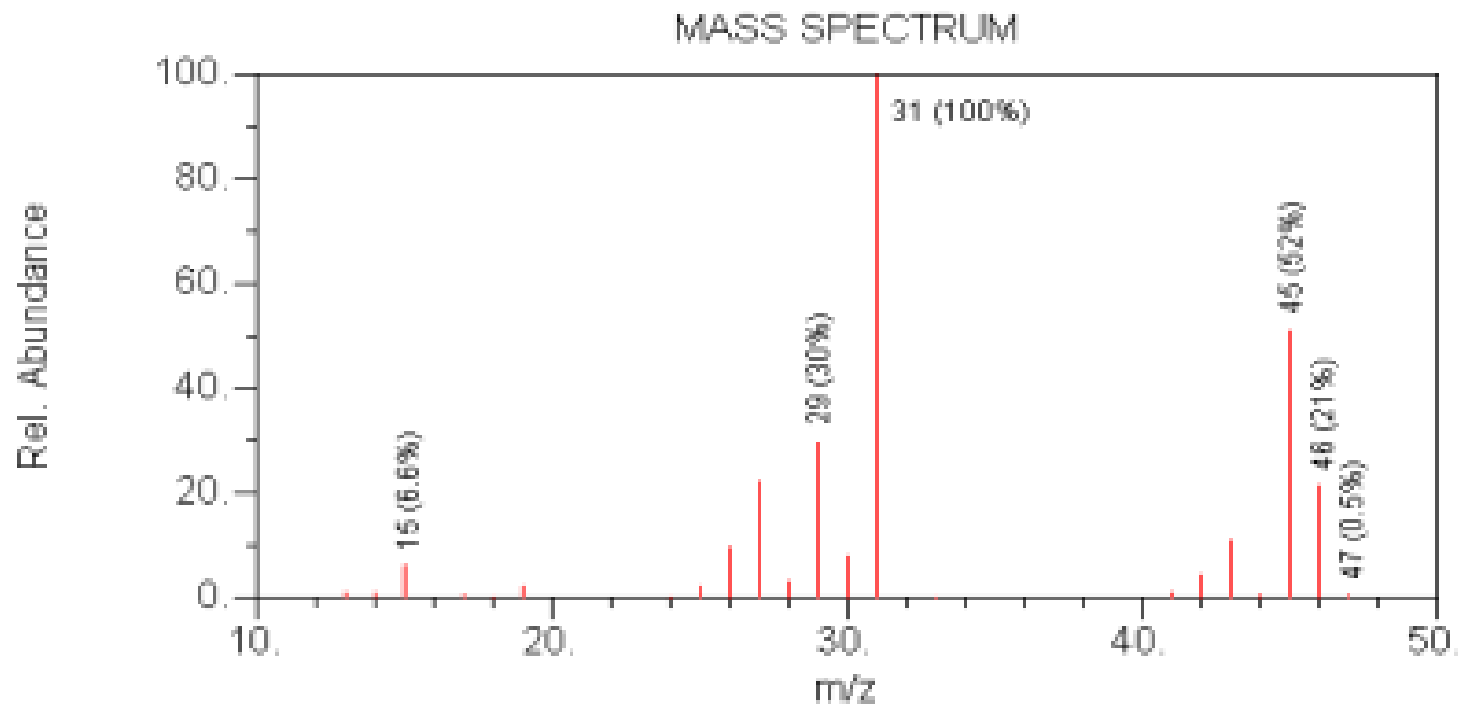
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## A granular world

- Are all the granular parts (ATOMS) the same?
  - Same weight?
  - Same bonding properties?
- Use a “mass separator” (mass spectrometer) to determine the mass of atoms

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## Atoms



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## Atoms

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- What is the definition of an atom?