

# Program Installation

- SRIM webpage → [www.SRIM.org](http://www.SRIM.org)
- You will find all information about the program: function, theory and link to download
- Download SRIM 2008 or SRIM 2012
- Tip for SRIM 2008 and Windows Vista (probably also Windows 7):
  - Vista: SRIM doesn't run properly if you install it in C:
  - you don't have permission to add Output files in C:
  - copy a folder with the installation to the desktop

# Report

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- **Report:**
  - Language: Swedish/English
  - Short theoretical introduction
  - Results:      What did you do?  
                  What did you get?
  - Conclusion
- **Hand in no later than October 11th**

***The passage of charged particles through matter can produce:***

- Inelastic collisions with the atomic electrons of the material
- Elastic scattering from nuclei
- Emission of Cherenkov radiation
- Nuclear reactions
- Bremsstrahlung

***Effects observed:***

- Energy loss
- Deflection from incident direction

# Basic definitions

- **Stopping power**: Average energy loss per unit path length
  - Bethe-Bloch formula: Quantum mechanical calculation of energy loss (Leo 2.2.2)
  - Bragg curve: Shows variation of  $dE/dx$  as a function of the penetration depth of the particle in matter → More energy will be deposited at the end of the path (Leo 2.2.3)
- **Range**: Distance travelled by the particle before it loses all its energy (Leo 2.2.9)
  - Energy loss is not continuous
    - Range **straggling**