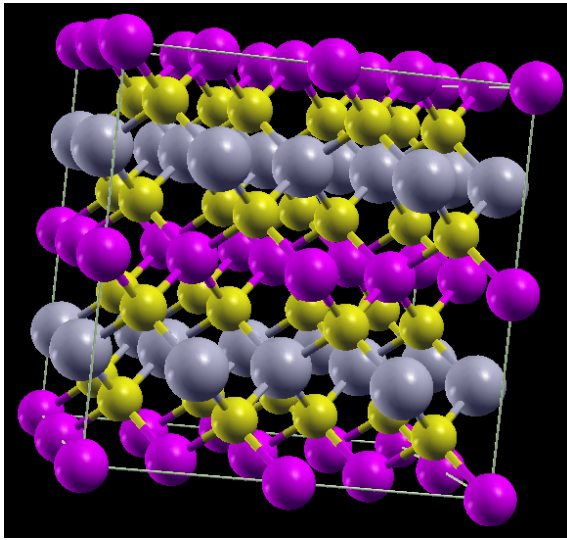
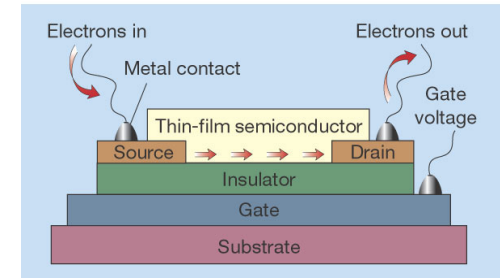


# Clancy group: 2015 M.Eng. projects– Electronic materials

## 1. Next Generation Semiconductor Design- Doped III-V materials.



Purple, green, grey:  
Alternating layers of  
In, Ga, As



### Background

- Further improvement in Si-based logic devices is limited.
- Recapture “Moore’s law” with ternary III/V materials ( $\text{In}_{0.47}\text{Ga}_{0.53}\text{As}$ ) with Si as a dopant
- Collaboration with Thompson and industry
- **M.Eng. Project: Study diffusion of dopant atoms (Si) in InGaAs**

### Computational Tools:

- **Electronic structure calculations**
  - **Molecular Dynamics**
  - **Kinetic Monte Carlo**