

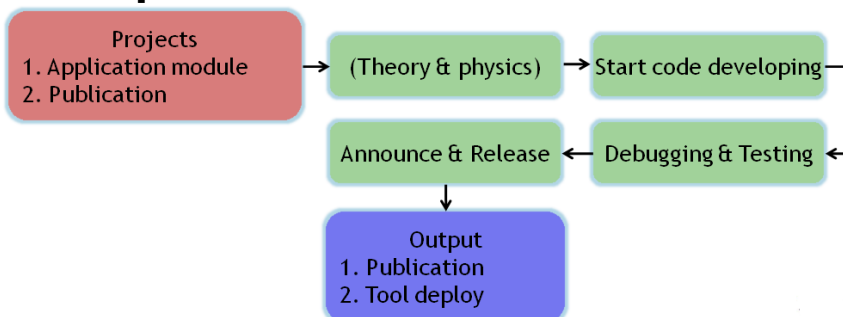
## Objective

- **Develop a new atomistic simulation tool for nanoelectronic modeling**
  - ✓ High performance
  - ✓ Memory Efficient
  - ✓ Easy to use & develop new science applications
- **Deliver the new physics**
  - ✓ Replace existing NEMO 3-D capabilities & more
- **Create a new application for supercomputing environment**
  - ✓ Toward Peta-flop application

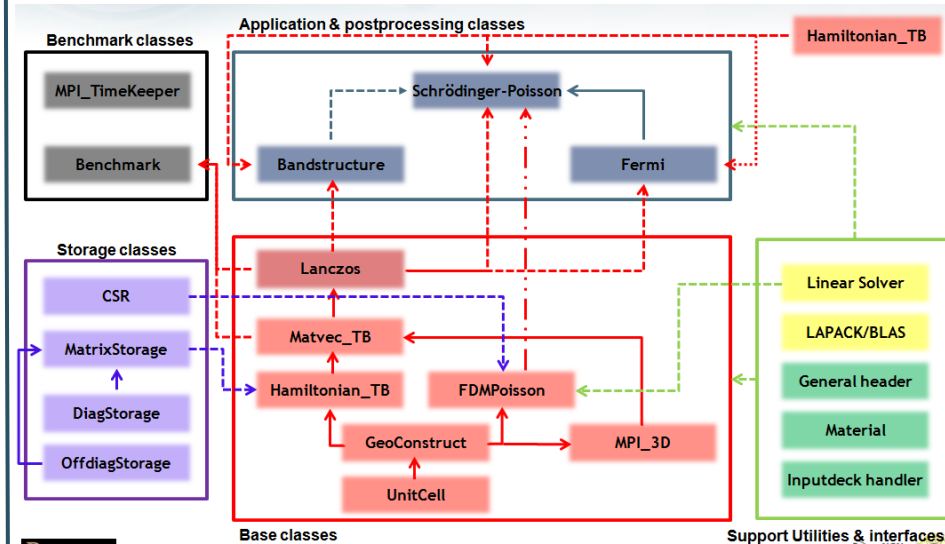
## Major Features & Impact

- **3D Domain decomposition scheme**
  - ✓ Capable of assigning more nodes to your simulation  
→ reduce the simulation time
- **Module based design (C++)**
- **Parallelized (MPI ready)**

## Development Process



## Software Structure



## Ongoing projects (example)

- **Donor physics**
  - ✓ Using Schroedinger-Poisson solver to see self-consistent potential profile of very high-doped P impurity system
  - ✓ How will the bands move due to the donors in the device?

