XRD 2

Session 1: 46 pts

1. Obtaining survey spectrum of single crystal Si and W/Si thin film and indexing of their peaks **10 pts (5 pts for each material)**
2. Obtaining detailed spectra of each Si and W XRD peak and Gaussian fits **16 pts (8 pts for each material)**
3. Discussion on the preferred orientations of Si wafer and the W/Si thin film **6 pts (3 pts for each material)**
4. Deduction of $FWHM_{inst}$ from Si peaks as a function of tan θ by curve-fitting **7 pts**
5. Calculation of $FWHM_{size+strain}$ in W/Si **7 pts**

Session 2: 54 pts

6. Obtaining survey spectra of Si-Ge and Si-W powder mixtures and characterization of phases before annealing **16 pts (8 pts for each material)**
7. Obtaining survey spectra of Si-Ge and Si-W powder mixtures and characterization of phases after annealing **16 pts (8 pts for each material)**
8. Estimation of Si-W at% ratio in the annealed sample **6 pts**
9. Estimation of % of original Si-W sample that has reacted **6 pts**
10. Characterization of grain size and strain of each phase in annealed Si-Ge **10 pts**