Bonding of Si interfaces has become an important technique in semiconductor technology. In the first part of the talk I will discuss how grazing incidence x-ray diffraction and x-ray reflectivity can be used to characterise such interfaces and reveal important details about the microscopic phenomena involved in bonding process.

In the second part of the talk I will show how bonding technology can be used to make one and two dimensional x-ray wave guides and show first results.

**Keywords:** reflectometry, interface structure, bonding