

Title: "A review of new applications of engineered substrates for electronics"

Speaker: Didier Landru

Abstract: Fast growing electronic applications such as Internet-Of-Things (IOT), mixed signal processing or silicon photonics require silicon-on-insulator substrates (SOI) with very challenging specifications. Beyond silicon, thin layers of large bandgap semiconductors or piezoelectric oxides are of great interest for power electronics or RF filters. For all these applications, the Smart-Cut(TM) process is the only technology compatible with high volume manufacturing that allows transferring ultra-thin layers of crystalline material with the required quality level. This seminar aims to describe the key challenges in designing and manufacturing this new generation of electronic substrates. First, a review of the modern applications of SOI and engineered substrates will be done, highlighting their advantages as well as their specificity in terms of specifications. Then, the manufacturing challenges will be described, from the physical modeling of fabrication processes to the need of developing new dedicated metrologies. Finally, some examples will be detailed for the main devices on the market.