

Plenary Talk

PLV VII Wed 14:00 HSZ 02

Ferroelectric and multiferroic domain walls for nanotechnology — •DENNIS MEIER — Department of Materials Science and Engineering, NTNU Norwegian University of Science and Technology — Center for Quantum Spintronics, Department of Physics, NTNU Norwegian University of Science and Technology

Ferroelectric and multiferroic domain walls have emerged as a new type of functional interface. Because of their distinct symmetry and chemical environment, the domain walls offer a wide variety of functional

electric and magnetic properties, representing excellent 2D components for the development of more agile next-generation nanotechnology. In my talk, I will discuss fundamental key properties of domain walls in ferroics and how the field of domain wall nanoelectronics evolved from classical device ideas to advanced concepts, where the walls themselves are used as ultra-small electronic components. I will conclude with a discussion of open experimental challenges and newly discovered domain-wall phenomena that may play an important role in future directions of the field.