PIC simulations of low pressure plasmas using graphics processing units  PHILIPP MERTMANN, Ruhr-University Bochum, AEPT, DENIS EREMIN, THOMAS MUSSEN BROCK, Ruhr-University Bochum, TET, PETER AWAKOWICZ, Ruhr-University Bochum, AEPT — GPU-computing (graphics processing units) is a new and fast technology to solve mathematical problems highly parallel. Particle in cell (PIC) simulations can be parallelized for the most part, but still have some modules that can lead to problems when running on a GPU. Programming the code straight forward can actually decrease the speed in comparison with a normal CPU. In this contribution we present different implementations and an outlook on how a two-dimensional code can be approached.