

In last two years, the proposal to create artificial graphene in standard semiconducting 2D systems via surface patterning has emerged. This way, an alternative system would be created, allowing us to study phenomena related to Dirac-type particles in a fully carbon free system. The main idea of the concept assumes the creation of an additional potential in a quantum well by nanopatterning of the specimen surface or by using local electrodes. The additionally introduced modulation can transform the conventional (i.e. parabolic) energy dispersion into separated minibands with possible appearance of Dirac cones. In the theoretical part, we introduce four basic criteria that estimate appropriate technological parameters and the required experimental conditions. Experimentally, we study the cyclotron resonance of prepared heterostructures AlGaAs/GaAs with induced hexagonal potential via the etching lateral holes. The observed multi-mode resonance response is discussed with respect to the expected appearance of Dirac cones.