

Abstract: In this work we studied magnetic field magnitude and direction generated by a prototype of 2-dimensional electromagnet, which was recently constructed in Laboratory of the OptoSpintronics. This electromagnet is formed by two pairs of coils with a mutually perpendicular position of their poles. In particular, we revealed that, by appropriately setting the current through the coils, it is possible to rotate reproducibly the field direction in the plane of the poles for the field magnitude of about 200 mT. We also observed that the generated field is rather homogeneous in a region with a radius of about 5 mm, which corresponds to a typical sample size. On the other hand, the functionality of the electromagnet at lower fields could not be tested unambiguously due to technical problems with a home-made detection Hall probes. This problem will be addressed in the following work.