

ABSTRACT

Currently in the industrial world, electromagnetic phenomena are widely used. One of the testing methods that uses electromagnetic phenomena is the Non-Destructive Testing (NDT) method. In NDT there are several methods that use electromagnetic phenomena, namely Magnetic Particle Inspection (MPI), Magnetic Flux Leakage (MFL), and Eddy Current Testing (ECT). The three methods consist of a coil of wire that is energized to produce a magnetic field that is used to induce the test object to detect defects in components. testing can be made more responsive and observable. In this research, the coils will be varied in the form of cylinders, rectangles, hexagons, and octagons. This study will analyze the effect of the number of sides and the area of the coil on the value of the magnetic field generated at the center point of the coil geometry and to find out whether there are variations in the shape of other coils that produce better magnetic field values than cylinders. Experimental results show that from various variations of coil shape by observing the effect of the number of sides and coil area, it shows that the cylindrical coil has the highest magnetic field value compared to other coil variations, namely 17.5 G so that the cylindrical coil is still the most effective coil for use in industry. which utilizes a coil as a generator of a magnetic field.

Keywords : Non Destructive Testing, Coils, Magnetic Fields