

Improved Mutual Inductance of Rogowski Coil Using Hexagonal Core

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Abstract : Rogowski coils are increasingly used for measurement of AC and transient electric currents. Mostly used Rogowski coils now are with circular or rectangular cores. In order to increase the sensitivity of the measurement of Rogowski coil and perform smooth wire winding, this paper studies the effect of increasing the mutual inductance in order to increase the coil sensitivity by presenting the calculation and simulation of a Rogowski coil with equilateral hexagonal shaped core and comparing the resulted mutual inductance with commonly used core shapes.

Keywords : Rogowski coil, mutual inductance, magnetic flux density, communication engineering

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