Significance of Square Non-Spiral Microcoils for Biomedical Applications

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Abstract : Micro coils are significant components for micro magnetic sensors and actuators especially in biomedical devices. Non-spiral planar microcoils of square, hexagonal and octagonal shapes are introduced for the first time in this paper. Comparison between different planar spiral and non-spiral coils are also discussed. The fabrication advantages and low power dissipation of non-spiral structures make them a strong alternative for conventional spiral planar coils. Series resistance of non-spiral coil is lesser than that of spiral coils though magnetic field is slightly lesser for non-spiral coils. Comparison of different planar microcoils shows that the proposed square non-spiral coil gives better performance than other structures. **Keywords :** non-spiral planar microcoil, power dissipation, series resistance, spiral

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