## ABSTRACT

A METHOD TO TRAP AIR AT THE SILICON SUBSTRATE FOR IMPROVING THE QUALITY FACTOR OF RF INDUCTORS IN CMOS TECHNOLOGY

A new method of fabricating an inductor utilizing air as an underlying barrier in the manufacturing of integrated circuits is described. A field oxide region is formed in and on a semiconductor substrate and then removed whereby a well is left in the semiconductor substrate. A polish stop layer is deposited over the substrate and within the well. The polish stop layer is covered and the well filled with a spin-on-glass layer. The spin-on-glass layer is polished back to the polish stop layer. The said polish stop layer is removed. A first oxide layer is deposited overlying the spin-on-glass layer and the semiconductor substrate and is patterned using an inductor reticle whereby a plurality of openings are made through the first oxide layer to the spin-on-glass layer. All of the spin-on-glass layer within the well is removed through the plurality of openings. Thereafter, a second oxide layer is deposited overlying the first oxide layer and capping the plurality of openings thereby forming an air barrier within the well. A metal layer is deposited overlying the second oxide layer and patterned using the same inductor reticle to form the inductor in the fabrication of an integrated circuit device.

(FIGURE 1 IS SUGGESTED FOR PUBLICATION)