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Title:	Tantalum pentoxide dielectric for capacitance and proposed bridged circuits for mangneto - capacitance
Authors:	<a href="#">Singh, Ajeet Kumar</a>
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Abstract:	<p>In the previous decade, nanoscience has been a fast-changing and expanding subject. This contains recent work as well as more advanced concepts. Three key fields of nanoscience and nanotechnology include nanomaterials, nanodevices, nano measurement, and nano- characterization. As systems scale down to the nanoscale scale and new nanodevices arise, precise characterization and thorough knowledge of their electrical structure become more vital but more challenging. Capacitance can now be measured precisely, thanks to techno- logical improvements over the years. However, as the miniaturisation of electromechanical devices pushes measuring techniques to their limits, there is a need to enhance the mea- surement of tiny capacitance changes. We created a setup for high-precision capacitance measurements at low temperatures and strong magnetic fields in this paper. We discuss the present capacitance measuring devices in use and the need for improvement in the first chapter. In the second chapter, we explain several essential ideas in the design and operation of capacitance measuring devices, and in the third chapter, we describe the experimental setup and go through all of the components utilised and built-in in detail. The last chapter discusses the progress we've achieved thus far in manufacturing the components, as well as preliminary results and future work.</p>
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