**Title**

Sensing strain with soft elastomeric capacitors

**ABSTRACT**

 The report discusses the use of soft Dryflex 500120 based elastomeric capacitors (SEC) for Structural Health Monitoring (SHM) applications. When one plate of an SEC is adhered to the surface of a structure, the SEC can be used as a surface strain gauge with local strain inducting a capacitance change. Since Dryflex 500120 based capacitors are known to be affected by temperature, humidity and memory effects, a study of these effects will be conducted to determine how they affect the use of SEC as a capacitive strain gauges.

 In the second part of the report, continuous-time and discrete-time readout circuits that can be used for applying the SEC in SHM applications will be discussed.