

# COMPARISON BETWEEN ANSYS AND CATIA SIMULATION CAPABILITY IN SIMULATING ROUND SHAPE DIAPHRAGM OF MEMS PIEZORESISTIVE PRESSURE SENSOR

## Abstract

This paper presents a comparative study of MEMS Piezoresistive Pressure Sensor simulation using two different software of ANSYS and CATIA respectively. It is aimed to investigate the feasibility of utilizing CATIA software in simulating microstructure such as MEMS device as an alternative to ANSYS simulation software. CATIA software is chosen because it is usually used in the automotive industries worldwide. Two types of diaphragm design were used in this simulation which is supported rim and without supported rim. Tetrahedral meshing with size of 0.05 mm was used in both ANSYS and CATIA simulation. Analysis of results is then made on the magnitude of x-component and Von Misses stresses on the surface of the diaphragm and also the diaphragm deflection. Based on the findings, it is concluded that CATIA software can also be used as an alternative in modeling and simulating a microstructure such as MEMS device.