



**VIRTUAL SMART STRUCTURES AND DYNAMICS LAB**

**Experiment 5**

**Piezoelectric Energy Harvesting and Structural Health Monitoring using Thin Surface Bonded PZT Patches**

**POST EXPERIMENT QUIZ QUESTIONS**

- 1) Plot the comparison of undamaged and damaged conductance signature for the damaged span.
- 2) Calculate the root mean square deviation (RMSD) values for all the spans by comparing damaged and undamaged signatures?
- 3) Plot the histogram of RMSD with increasing damage.
- 4) What is the range of sweep signal?
- 5) How much is the energy harvested from vibrations in  $\mu$ Ws, when the bridge vibrates for 1 minute. Assume the bridge to be three span concrete bridge in North of France (Peigney and Siegert, 2013), refer Table 6.3 (page 139) of Ph. D. thesis (<http://web.iitd.ac.in/~sbhalla/thesispdf/naveet.pdf>) of Dr. Naveet Kaur.