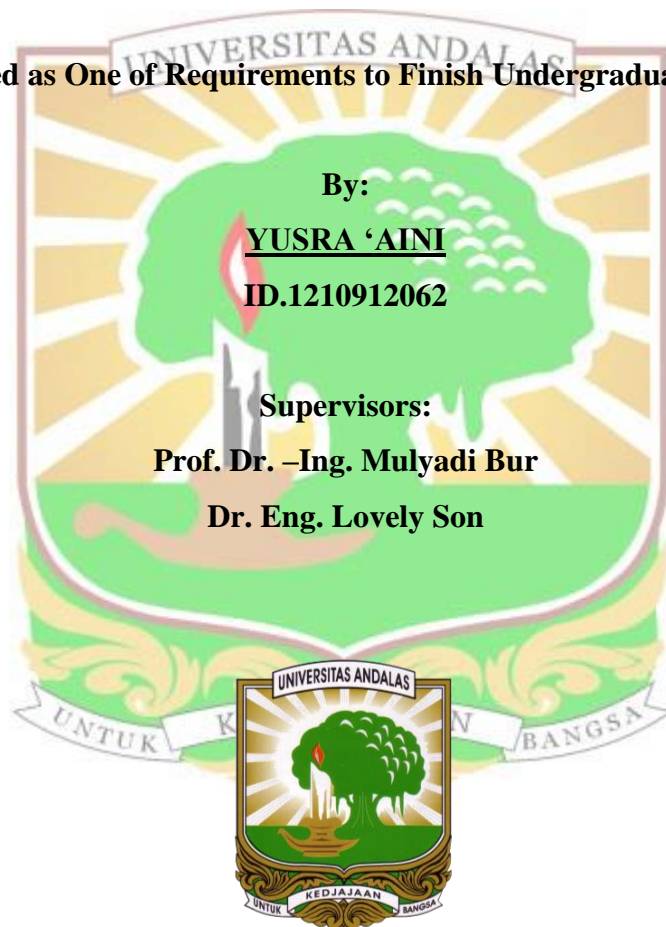


**FINAL PROJECT
DESIGN AND CONSTRUCTION**

**EXPERIMENTAL EVALUATION OF TUNED LIQUID
COLUMN DAMPER AND TUNED MASS DAMPER FOR
REDUCING THE SEISMIC RESPONSE OF VIBRATION
SYSTEM**

Is Proposed as One of Requirements to Finish Undergraduate Program



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ABSTRACT

One of several techniques used to reduce the structure vibration due to dynamic load is by using dynamic absorber. Tuned Liquid Column Damper (TLCD) and Tuned Mass Damper (TMD) are two kinds of dynamic vibration absorber that generally and usually used to reduce the structure response due to dynamic load.

In this research the combination between TLCD and TMD is purposed to reduce the vibration response of two Degrees of Freedom (DOF) structures. The research uses V-shape TLCD. The TMD is mounted on the upper of building, while the TLCD is mounted on the upper of TMD. The evaluation of the absorbers performance is conducted experimentally by varying the fluid volume of TLCD and mass of TMD. The effects of TLCD fluid volume and TMD mass variation are evaluated by comparing the Frequency Response Function (FRF) of the system obtained by experiment.

The result shows that the TLCD and TMD are effective to reduce the vibration by using 427 mL of TLCD fluid volume and 0.351 kg of TMD mass. It is better used for dynamic damper mass with 9.595% mass of building.

Keywords: TLCD, TMD, dynamic absorber, FRF

