SI	Name of Staff	Title of the Research Paper	Name of University	Month and Year
1	**Nasser Salim Al-Ruqaishi**	**Novel Approach for Nonlinear Damping System**	**The University of Sheffield / UK**	**August 2018**

Abstract

One of the most typical dynamic systems, the nonlinear damping system is a type of energy dissipation equipment and often installed inside mechanical and civil engineering structural systems for vibration control purpose. The nonlinear system area is a very rich and interesting topic and it is in the interest of engineers because most physical systems are nonlinear systems.

More specifically, linear system equations are much easier studied than nonlinear ones, because the nonlinear problems are difficult to solve and are more expensive. Therefore, to understand the nonlinear system behaviour, SIMULINK working to simulate linear damping system and how can this system appear as a nonlinear system.

This paper studies analysis linear system and nonlinear system through the theoretical calculations and numerical simulation methods. This goal is achieved through the search for previous studies and compare the results and the extraction of proposals and important recommendations that will serve scientific research on this topic. For this purpose, MATLAB and SIMULINK software which is suitable for analysis of the linear system and nonlinear system is used.

In this study was obtained new method for represent nonlinear damping system response during switching between two linear damping system. As result, the total response from the combination leads to the smooth transition between the initial system and the switch system.