MULTIOBJECTIVE OPTIMIZATION OF VIBRATION CONTROL WITH VISCO-ELASTIC DAMPING

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Tác giả: *Tran Quang Hung*

Tóm tắt bằng tiếng Việt:

Visco-elastic damping is one of the passive control methods in structural vibration. Multilayer visco-elastic patch is preferred because it contains highly effective and executive. In order to obtain an economical design, many objectives must be considered and this concept leads to solving multiobjective optimization problem. Genetic algorithm (GA) is an effective tool in such case. This study shows how optimal solutions can be derived by NSGA algorithm. A simple plate coupling with a cavity is considered. Multiobjective optimization is simulated with many variables: geometry, material properties.Visco-elastic damping is one of the passive control methods in structural vibration. Multilayer visco-elastic patch is preferred because it contains highly effective and executive. In order to obtain an economical design, many objectives must be considered and this concept leads to solving multiobjective optimization problem. Genetic algorithm (GA) is an effective tool in such case. This study shows how optimal solutions can be derived by NSGA algorithm. A simple plate coupling with a cavity is considered. Multiobjective optimization is simulated with many variables: geometry, material properties.

Từ khóa: vibroacoustic; vibration control; visco-elastic patches; multilayer plate; multiobjective optimization; genetic algorithm

Tóm tắt bằng tiếng Anh:

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Key words: vibroacoustic; vibration control; visco-elastic patches; multilayer plate; multiobjective optimization; genetic algorithm