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عنوان مقاله:

PREDICTION OF FATIGUE FAILURE FOR ELECTROSTATICALLY SUSPENDED ROTOR USING FINITE ELEMENT METHOD

محل انتشار:

مجله تحقیقات کاربردی, دوره 3, شماره 6 (سال: 1396)

تعداد صفحات اصل مقاله: 9

نویسندگان:

Mehrdad Yazdanirad - *Department of Mechanical Engineering, Iran University of Science and Technology, Iran*

Sasan Asiaei - *Department of Mechanical Engineering, Iran University of Science and Technology, Iran*

Reza Madoliat - *Department of Mechanical Engineering, Iran University of Science and Technology, Iran*

خلاصه مقاله:

The aim of this work is the calculation of dynamic loads and stresses acting on the rotor of an electrostatically suspended gyroscope in order to predict fatigue. In the first part of this work, forces and momentums that apply onrotor calculated by MATLAB software. In the next part of the work, forces and momentums calculated in previous part simulated on the rotor with the aim of ABAQUS software. The resulting simulations of the rotor, obtainedfor different rotor speeds, are used for fatigue analysis in order to make an optimal choice of rotor resistant to fatigue. Results validated by that reported in the literature and were in harmony with what reported by other scientists who used numerical simulations

کلمات کلیدی:

Electrostatically suspended gyroscope, Microelectromechanical system gyroscope, electrostatic levitation, Micromachined gyroscope, Finite element methods, Fatigue failure

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