

Journal of Science & Technology

Transaction on: Mechanical Engineering

December-January 2009-2010

Editor-in-Chief: Abolhassan Vafai

This Journal is published under the auspices of Sharif University of technology, Office of the Vice-Chancellor-in-Charge of Research.

The Journal is published every two months in Farsi language, aims at establishing a relationship between scientists active in different branches of science and technology and, in particular, at providing a forum for exchange of knowledge between scientists and technologists related to scientific problems prevailing in contemporary society. The journal also strives to present practical and theoretical analyses of these issues and facilitates the circulation of modern scientific findings by scientists and researchers for practical application. In addition, "Sharif" publishes papers focusing on issues of specific concern to universities, including research, technological advancements, and topics related to matters of higher education.

P.O.BOX 11155-8639 AZADI AVENUE, TEHRAN, I.R. IRAN
Phone: (98-21) 66005419 - 66164093 Fax: (98-21) 66012983
Web: http://www.sharifjournal.ir/ E-mail: pajouhesh@sharif.edu

3 PREDICTION OF GLOBAL SOLAR RADIATION IN KERMAN USING GEOMETRICAL, ASTRONOMICAL, GEOGRAPHICAL AND METEOROLOGICAL PARAMETERS

M. H. Saffaripour and M. A. Mehrabian

15 INVESTIGATION OF THE NONLINEAR VIBRATION OF A CABLE- MASS SYSTEM, DUE TO THE MOTION OF AN ATTACHED ACCELERATING MASS

A. R. Shahani and M. Ghadiri

25 NUMERICAL SOLUTION OF CONJUGATE MIXED CONVECTION AND RADIATION IN A HORIZONTAL ELECTRONIC BOARD WITH RECTANGULAR HEAT SOURCES

A. Behbahaninia, M. Ghasemi and M. R. Shirzadi

- 33 INVESTIGATING THE EFFECTS OF USING PIEZOELECTRIC LAYERS ON THE FREE AND FORCED VIBRATIONS OF FGM PLATES

 M. Shariyat and I. Aminaee
- 43 APPLICATION OF RETURN MAPPING ALGORITHM IN ANALYSIS OF PRESSURE VESSELS WITH NONLINEAR KINEMATIC HARDENING BEHAVIOR

A. Nayebi, K. Naderan Tahan and S. Bazdar

- 49 NUMERICAL STUDY OF PULSATING FLOW AND HEAT TRANSFER IN A PIPE PARTIALLY FILLED WITH A POROUS MEDIUM
 H. Sayevand and H. Shokouhmand
- 59 MODELING OF TWO-PHASE FLOW IN POROUS MEDIA BY MIXED-HYBRID FINITE-ELEMENT METHOD

 K. Goodarzi and B. Firoozabadi

RESEARCH NOTE

69 DESIGN OF A MULTI-FINGERED GRIPPER FOR CYLINDRICAL OBJECT MANIPULATION

H. Sayyaadi and M.Aghababaie

77 THE EFFECT OF RESIDUAL STRESSES ON THE FATIGUE BEHAVIOR OF ROTARY COMPONENTS

A.Esmati, G.H. Farrahi and M. Sadighi

85 THE WORKSPACE OF STEWART-GOUGH PARALLEL MANIPULATOR WITH PREDEFINED STIFFNESS

M.A. Hosseini, H.R. M. Daniali and M.J. Nategh

APPENDIX

98 ABSTRACTS OF PAPERS IN ENGLISH