



Vol.30 No.5 2017

Q K 1 8 0 2 9 5 1

# ACTA MECHANICA SOLIDA SINICA

固体力学学报(英文版)

An International Journal

ISSN 0894-9166



9 770894 916084

Published by  
**Acta Mechanica Solida Sinica Press**  
Wuhan, China  
<http://amss.hust.edu.cn>



# ACTA MECHANICA SOLIDA SINICA

Volume 30 No. 5

October 2017

## CONTENTS

Transient heat conduction analysis using the NURBS-enhanced scaled boundary finite element method and modified precise integration method.....	445
G. Lin, P. Li, J. Liu and P. Zhang	
Nonlinear frequency analysis of buckled nanobeams in the presence of longitudinal magnetic field .....	465
X.-P. Sun, Y.-Z. Hong, H.-L. Dai and L. Wang	
Analytical solutions for thermal vibration of nanobeams with elastic boundary conditions.....	474
J. Jiang and L. Wang	
Dynamic response of a Q&P steel to high-strain-rate tension .....	484
H. Wang, W. Zhang, D. Ma, B. Ma, D. Chen, X. Yang and C. Fan	
Influences of initial porosity, stress triaxiality and Lode parameter on plastic deformation and ductile fracture .....	493
Y.-S. Ma, D.-Z. Sun, F. Andrieux and K.-S. Zhang	
Development and application of state-dependent fractional plasticity in modeling the non-associated behavior of granular aggregates.....	507
Y. Sun, S. Song, Y. Xiao and J. Zhang	
Vibration analysis of atomic force microscope cantilevers in contact resonance force microscopy using Timoshenko beam model .....	520
X. Zhou, P. Wen and F. Li	
Topology optimization of piezocomposite resonator for maximizing excitation strength and synthesizing desired eigenmodes.....	531
X. Wang, Z. Lin and Y. Ren	
Experimental and numerical studies of impact on filament-wound composite cylinder .....	540
Q. Wu, X. Chen, Z. Fan, Y. Jiang and D. Nie	
Quantum effects on thermal vibration of single-walled carbon nanotubes conveying fluid.....	550
Y.-W. Zhang, L. Zhou, B. Fang and T.-Z. Yang	



Available online at [www.sciencedirect.com](http://www.sciencedirect.com)

ScienceDirect

Vol. 30 No. 5 October 2017

**ACTA MECHANICA SOLIDA SINICA (Bimonthly)**  
**Vol.30 No.5 2017**

---

Sponsored by  
The Chinese Society of Theoretical and Applied Mechanics  
Edited by  
Editorial Board of ACTA MECHANICA SOLIDA SINICA  
Wuhan, China

---

Copyright 2017 by Acta Mechanica Solida Sinica Press, Wuhan, China

Distributed by  
Editorial Department  
**ACTA MECHANICA SOLIDA SINICA**  
Huazhong University of Science and Technology  
Wuhan 430074, Hubei, China

---

**ISSN 0894-9166**  
**CN42-1121/O3**