Accepted Manuscript


Title: Thermo-electro-magneto-mechanical bending behavior of size-dependent sandwich piezomagnetic nanoplates

Authors: Mohammad Arefi, Ashraf M. Zenkour

PII: S0093-6413(17)30035-6
DOI: http://dx.doi.org/doi:10.1016/j.mechrescom.2017.06.002
Reference: MRC 3170

To appear in:

Received date: 24-1-2017
Revised date: 1-4-2017
Accepted date: 2-6-2017

Please cite this article as: Arefi, Mohammad, Zenkour, Ashraf M., Thermo-electro-magneto-mechanical bending behavior of size-dependent sandwich piezomagnetic nanoplates.Mechanics Research Communications http://dx.doi.org/10.1016/j.mechrescom.2017.06.002

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

ACCEPTED MANUSCRIPT

| Mechanics Research Communications.<br>Year | Publication Office:<br>Elsevier UK |
| --- | --- |
| Editor-in-Chief: A. Rosato New Jersey Institute of Technology, Newark, New Jersey, USA Anthony.Rosato@njit.edu | |

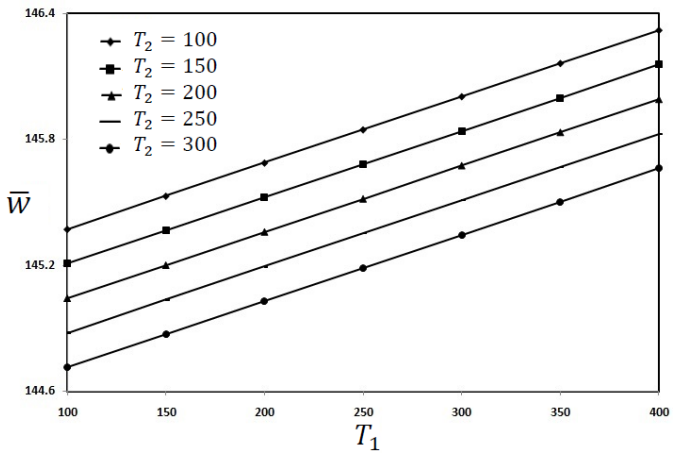
# Thermo-electro-magneto-mechanical bending behavior of size-dependent sandwich piezomagnetic nanoplates

Mohammad AREFI[1], Ashraf M. ZENKOUR[2,3,*]

[1]*Department of Solid Mechanics, Faculty of Mechanical Engineering, University of Kashan, Kashan 87317-51167, Iran*
[2]*Department of Mathematics, Faculty of Science, King Abdulaziz University, Jeddah 21589, Saudi Arabia*
[3]*Department of Mathematics, Faculty of Science, Kafrelsheikh University, Kafrelsheikh 33516, Egypt*

[*]Corresponding author: zenkour@kau.edu.sa, zenkour@sci.kfs.edu.eg
Tel.:+966-54-005-5690; fax: +966-12-640-0736
Accepted: ??, 2016.

**[Graphical Abstract]**




© 2015 The Authors. Published by Elsevier Ltd.

## Highlights

- Thermo-electro-magneto-mechanical bending analysis of a sandwich nanoplate is presented based on the Kirchhoff plate theory and nonlocal theory.
- The sandwich nanoplate includes an elastic nano-core and two piezomagnetic face-sheets actuated by applied electric and magnetic potentials.
- The governing equations for the electro-magneto-mechanical bending are derived in terms of the displacement components and electric and magnetic potentials.
- The effects of the nonlocal parameter, temperature rise, applied electric and magnetic potentials on the bending behaviors of sandwich nanoplates are investigated.

0093-6413© 2015 The Authors. Published by Elsevier Ltd.

Download English Version:

https://daneshyari.com/en/article/5018621

Download Persian Version:

https://daneshyari.com/article/5018621

Daneshyari.com