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PUBLICATIONS AND CONFERENCES

Publication Related to the Thesis:

1. **Harendra Kumar** and Santwana Mukhopadhyay. "Surface energy effects on thermoelastic vibration of nanomechanical systems under Moore-Gibson-Thompson thermoelasticity and Eringen's nonlocal elasticity theories." ***European Journal of Mechanics-A/Solids*** (2022): 104530. Elsevier (SCI, **IF: 4.220**)

2. **Harendra Kumar** and Santwana Mukhopadhyay. "Size-dependent thermoelastic damping analysis in nanobeam resonators based on Eringen's nonlocal elasticity and modified couple stress theories." ***Journal of Vibration and Control*** (2022): 10775463211064689. Sage (SCI, **IF: 3.095**)

3. **Harendra Kumar** and Santwana Mukhopadhyay. "Response of deflection and thermal moment of Timoshenko microbeams considering modified couple stress theory and dual-phase-lag heat conduction model." ***Composite Structures*** 263 (2021): 113620. Elsevier (SCI, **IF: 5.407**)

4. **Harendra Kumar** and Santwana Mukhopadhyay. "Thermoelastic damping in micro and nano-mechanical resonators utilizing entropy generation approach and heat conduction model with a single delay term." ***International Journal of Mechanical Sciences*** 165 (2020): 105211. Elsevier (SCI, **IF: 5.329**)

5. **Harendra Kumar** and Santwana Mukhopadhyay. "Thermoelastic damping analysis for size-dependent microplate resonators utilizing the modified couple stress theory and the three-phase-lag heat conduction model." ***International Journal of Heat and Mass Transfer*** 148 (2020): 118997. Elsevier (SCI, **IF: 5.584**)

6. **Harendra Kumar** and Santwana Mukhopadhyay. "Thermoelastic damping analysis in microbeam resonators based on Moore–Gibson–Thompson generalized thermoelasticity theory." ***Acta Mechanica*** 231 (2020): 3003-3015. Springer (SCI, **IF:2.698**)

7. **Harendra Kumar** and Santwana Mukhopadhyay. "Analysis of the quality factor of micro-beam resonators based on heat conduction model with a single delay term." ***Journal of Thermal Stresses*** 42.8 (2019): 929-942. Taylor & Francis (SCI, **IF: 3.280**)

8. **Harendra Kumar** and Santwana Mukhopadhyay. "Small-scale effect on thermoelastic vibration of microbeam considering modified couple stress theory and Moore-Gibson-Thompson thermoelasticity equation." (Under review)

Publications Apart from the Thesis:

1. Bhagwan Singh, **Harendra Kumar**, and Santwana Mukhopadhyay. "Thermoelastic damping analysis in micro-beam resonators in the frame of modified couple stress and Moore–Gibson–Thompson (MGT) thermoelasticity theories." ***Waves in Random and Complex Media*** (2021): 1-18. Taylor & Francis (SCI, **IF: 4.853**)

2. Roushan Kumar, Ravi Kumar, and **Harendra Kumar**. "Effects of phase-lag on thermoelastic damping in micromechanical resonators." ***Journal of Thermal Stresses*** 41.9 (2018): 1115-1124. Taylor & Francis (SCI, **IF: 3.280**)

Conferences and Workshops:

1. Participated in ***64th International Congress of ISTAM*** held at IIT Bhubaneshwar during December 9-12, 2019 and presented a work with the title "*Analytical solution for thermoelastic damping in microbeam resonators based on generalized thermoelasticity theory with a single delay term subjected to a uniform load.*"

2. Participated in ***International Conference on Differential Equations and Control Problems: Modeling, Analysis and Computations (ICDECP19)*** held at IIT Mandi during June 17-19, 2019 and presented a work with the title "*Size-dependent vibration of microplate resonators based on modified couple stress theory and three-phase-lag heat conduction mode*l."

3. Participated in ***International Conference on Engineering, Computers and Natural Sciences 2018*** held at Vivanta by Taj, Panjim, Goa during October 19-21, 2018 and presented the paper with the title "*Investigation of thermoelastic*

damping in microbeam resonators using heat conduction model with a single delay term."

4. Participated in ***NCM Workshop on "Continuum Mechanics: Principles and Applications*** " held at Panjab University during November 19-24, 2018.

5. Attended training programme on ***Tools for Scientific Documentation: LaTeX, JabRef, DocEar and other open source software*** held at DST, Banaras Hindu University during January 5-16, 2018.

6. Participated in ***Annual Foundation School (AFS-1)*** held at Department of Mathematics, IIT Delhi during December 4-30, 2017.

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Appendix:

$$R_1 = 1 + 3\left(\frac{\mu}{E}\right)\left(\frac{l}{h}\right)^2$$

$$R_2 = 12\left(\frac{\mu}{E}\right)\left(\frac{L}{h}\right)^2$$

$$R_3 = -3\left(\frac{\mu}{E}\right)\left(\frac{h}{L}\right)\left(\frac{l}{h}\right)^2$$

$$R_4 = 12\left(\frac{\mu}{E}\right)\left(\frac{L}{h}\right)$$

$$R_5 = 6\left(\frac{L}{h}\right)$$

$$R_6 = \frac{1}{4}\left(\frac{\mu}{E}\right)\left(\frac{h}{L}\right)\left(\frac{l}{h}\right)^2$$

$$R_7 = \left(\frac{\mu}{E}\right)\left(\frac{L}{h}\right)$$

$$R_8 = \frac{1}{4}\left(\frac{\mu}{E}\right)\left(\frac{h}{L}\right)^2\left(\frac{l}{h}\right)^2$$

$$R_9 = \left(\frac{\mu}{E}\right)$$

$$R_{10} = p^2L^2$$

$$R_{11} = \frac{\rho C_v \varepsilon L}{k}$$

$$R_{12} = \frac{\tau_q \rho C_v \epsilon L}{k}$$

$$R_{13} = \frac{T_0 \beta^2 I \varepsilon}{kEAh}$$

$$R_{14} = \frac{\tau_q T_0 \beta^2 I \varepsilon}{kEAh}$$

$$\widetilde{B}_1 = R_1 r_m^2 + R_2$$

$$\widetilde{B}_2 = R_3 r_m^3 + R_4 r_m$$

$$\widetilde{B}_3 = R_5 r_m$$

$$\widetilde{B}_4 = R_6 r_m^3 + R_7 r_m$$

$$\widetilde{B}_5 = R_8 r_m^4 + R_9 r_m^2$$

$$\widetilde{B}_6 = R_{13} r_m$$

$$\widetilde{B}_7 = R_{14} r_m$$

$$\widetilde{B}_8 = r_m^2 + R_{10}$$

$$\widetilde{B}_9 = \left(r_m^2 + R_{10}\right)\tau_2 + R_{11}$$

$$\widetilde{B}_{10} = R_{12}$$

$$w_0 = \widetilde{B}_1\widetilde{B}_8$$

$$w_1 = \widetilde{B}_1\widetilde{B}_9 - \widetilde{B}_3\widetilde{B}_6$$

$$w_2 = \widetilde{B}_8 + \widetilde{B}_1\widetilde{B}_{10} - \widetilde{B}_3\widetilde{B}_7$$

$$w_3 = \widetilde{B}_9$$

$$w_4 = \widetilde{B}_{10}$$

$$\overline{w}_0 = \widetilde{B}_8\left(\widetilde{B}_1\widetilde{B}_5 + \widetilde{B}_2\widetilde{B}_4\right)$$

$$\overline{w}_1 = \widetilde{B}_9\left(\widetilde{B}_1\widetilde{B}_5 + \widetilde{B}_2\widetilde{B}_4\right) - \widetilde{B}_3\widetilde{B}_5\widetilde{B}_6$$

$$\overline{w}_2 = \widetilde{B}_8\left(\widetilde{B}_1 + \widetilde{B}_5\right) + \widetilde{B}_{10}\left(\widetilde{B}_1\widetilde{B}_5 + \widetilde{B}_2\widetilde{B}_4\right) - \widetilde{B}_3\widetilde{B}_5\widetilde{B}_7$$

$$\overline{w}_3 = \widetilde{B}_9\left(\widetilde{B}_1 + \widetilde{B}_5\right) - \widetilde{B}_3\widetilde{B}_6$$

$$\overline{w}_4 = \widetilde{B}_8 + \widetilde{B}_{10}\left(\widetilde{B}_1 + \widetilde{B}_5\right) - \widetilde{B}_3\widetilde{B}_7$$

$$\overline{w}_5 = \widetilde{B}_9$$

$$\overline{w}_6 = \widetilde{B}_{10}$$

$$\widetilde{w}_1 = \widetilde{B}_1\widetilde{B}_6$$

$$\widetilde{w}_2 = \widetilde{B}_2\widetilde{B}_7$$