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An analytical solution for thermoelastic damping in a micro-beam based on generalized theory of thermoelasticity and modified couple stress theory

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**Highlights**

- Thermoelastic damping is studied in a micro-beam resonator.
- The modified coupled stress theory is employed to simulate the small scale effects.
- The type III of Green-Naghdi theory of coupled thermoelasticity is used.
- The small scale effects on dynamic behaviors of nano beam resonator studied in details.
- An analytical solution is proposed for the problem.

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