

Accepted Manuscript

Free Vibration Analysis of Bi-Directional Functionally Graded Single/Multi-Cracked Beams

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PII: S0020-7403(18)31005-1
DOI: [10.1016/j.ijmecsci.2018.06.004](https://doi.org/10.1016/j.ijmecsci.2018.06.004)
Reference: MS 4372



To appear in: *International Journal of Mechanical Sciences*

Received date: 29 March 2018
Revised date: 21 May 2018
Accepted date: 1 June 2018

Please cite this article as: Sundaramoorthy Rajasekaran , Hossein Bakhshi Khaniki , Free Vibration Analysis of Bi-Directional Functionally Graded Single/Multi-Cracked Beams, *International Journal of Mechanical Sciences* (2018), doi: [10.1016/j.ijmecsci.2018.06.004](https://doi.org/10.1016/j.ijmecsci.2018.06.004)

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Highlights

- Influence of bi-directional material variation on vibration of cracked beams is investigated.
- A general material variation is presented using different functions.
- A novel finite element method in conjunction with different methods is used.
- Stiffness matrix for a BDFG cracked Euler beam is derived.
- Beam is studied with single, double, triple and higher number of cracks.
- A comprehensive parametric study for characteristics of cracks and material variation is proposed.

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