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## Development of two-layer multiple transmitter fibre optic bundle displacement sensor and application in structural health monitoring

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### Highlights

- New two-layer multiple transmitter fibre optic bundle displacement sensor design
- Greater enhanced sensitivity and linear working range than two-fibre configuration
- Calibrated sensor measurable displacement range from nanometres to millimetres
- High signal-to-noise ratio of 65 dB up to 500 Hz and drop to 25 dB at 2 kHz
- Sensor provided good performance in modal testing and structural health monitoring

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