Review of high sensitivity fibre-optic pressure sensors for low pressure sensing

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ABSTRACT
Fibre Bragg grating (FBG) pressure sensors show a great potential in replacing conventional electrical pressure sensors due to their numerous advantages. However, increasing their pressure sensitivity performance for low hydrostatic pressure measurement is still a challenge. This paper reviewed recent pressure sensitivity enhancement methods that could be divided into two groups, namely intrinsic and extrinsic. For the intrinsic enhancement method, this paper reviewed polymer FBGs, special fibre sensors, interferometric sensors, and special grating sensors. For the extrinsic enhancement method, polymer-based pressure transducers, diaphragm-based pressure transducers, and other structure-based pressure transducers were reviewed in detail.

KEYWORDS
Fibre Bragg grating (FBG); Optical fibre sensors; Pressure sensors; Liquid-level sensors
ACKNOWLEDGEMENTS

The authors would like to thank the Faculty of Mechanical & Manufacturing Engineering, Universiti Malaysia Pahang (http://www.ump.edu.my/) for providing the laboratory facilities; and the Institute of Postgraduate Studies (IPS), Universiti Malaysia Pahang for providing the financial support through Doctoral Research Scheme (DRS) scholarship. Finally, special thanks to the UMP Research and Innovation Department for providing the internal research grant under Grant RDU180387.