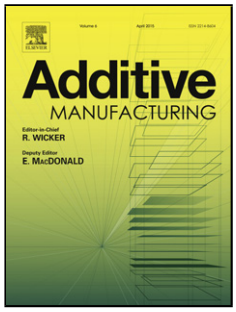

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Acoustic emission for *in situ* quality monitoring in additive manufacturing using spectral convolutional neural networks

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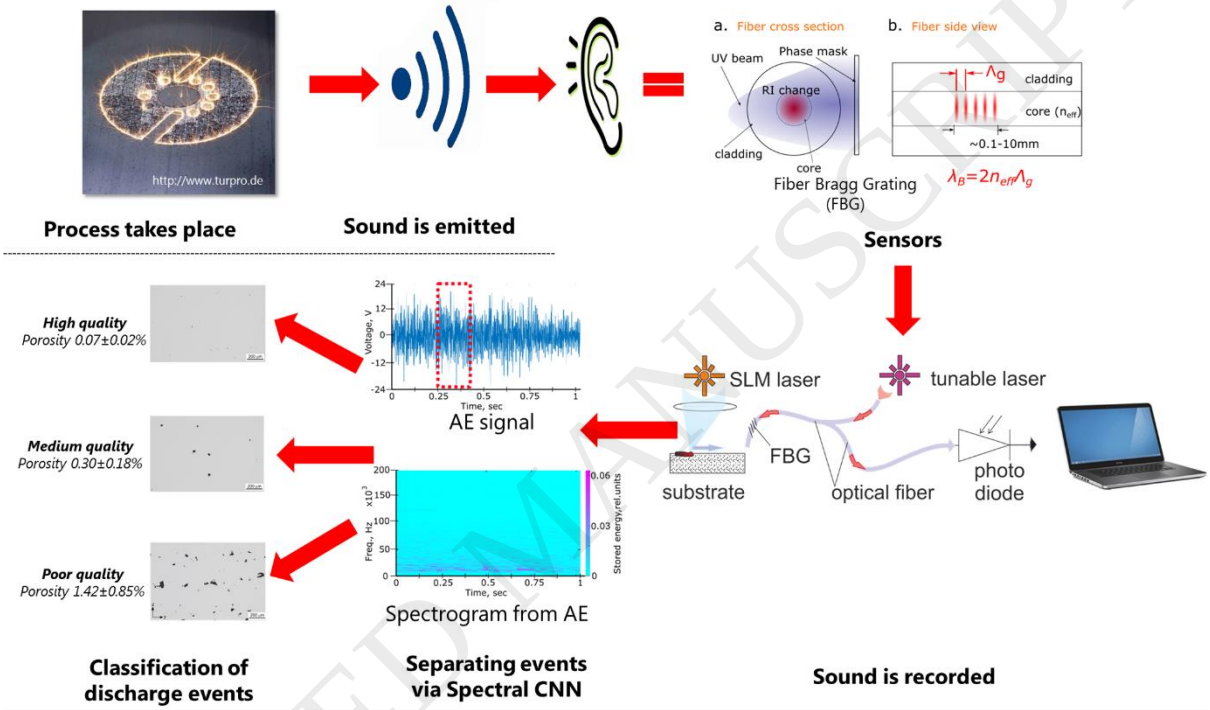
Graphical Abstract



Highlights

- An *In situ* quality monitoring for AM is presented
- Our approach combines acoustic emission with machine learning
- Fiber Bragg grating is used as acoustic sensors
- spectral convolutional neural networks is used for classification in terms of quality level
- The classification accuracy of the events ranged between 83 – 89%.

Abstract:

Additive manufacturing, also known as 3D printing, is a new technology that obliterates the geometrical limits of the produced workpieces and promises low running costs as compared to traditional manufacturing methods. Although it has high expectations in industry, the absence of

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