

A Review of Fractal Dimension Computing Methods Applied to Wear Particles

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Abstract : Various types of particles found in lubricant may be characterized by their fractal dimension. Some of the available methods are: yard-stick method or structured walk method, box-counting method. This paper presents a review of the developments and progress in fractal dimension computing methods as applied to characteristics the surface of wear particles. An overview of these methods, their implementation, their advantages and their limits is also present here. It has been accepted that wear particles contain major information about wear and friction of materials. Morphological analysis of wear particles from a lubricant is a very effective way for machine condition monitoring. Fractal dimension methods are used to characterize the morphology of the found particles. It is very useful in the analysis of complexity of irregular substance. The aim of this review is to bring together the fractal methods applicable for wear particles.

Keywords : fractal dimension, morphological analysis, wear, wear particles

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