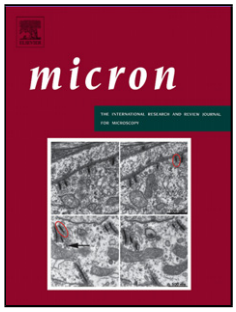

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PII: S0968-4328(17)30043-4
DOI: http://dx.doi.org/doi:10.1016/j.micron.2017.02.008
Reference: JMIC 2398

To appear in: *Micron*

Received date: 1-2-2017
Revised date: 24-2-2017
Accepted date: 24-2-2017

Please cite this article as: Mirzaei, Mohsen, Rafsanjani, Hossein Khodabakhshi, An Automatic Algorithm for Determination of the Nanoparticles from TEM Images Using Circular Hough Transform.Micron http://dx.doi.org/10.1016/j.micron.2017.02.008

An Automatic Algorithm for Determination of the Nanoparticles from TEM Images Using Circular Hough Transform

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Highlights

- Automated measurement of the number and the average primary diameter of the nano particles from TEM images
- This method is based on the modified version of the hough transform with pre-processing modifications on TEM images.
- The method has been tested on several TEM images with different complexity in the images.
- It has less than 5% difference over 11 different TEM images, relative to manual sizing

Abstract

Nanoparticles have a wide range of applications in science and technology, and the size distribution of nanoparticles is one of the most important statistical properties. Transmission electron microscopy (TEM) or X-ray diffraction is commonly used for the characterization and measuring particle size distributions, but manual analysis of the micrographs is extremely labor-intensive. Here, we have developed an image processing algorithm for measuring