

Numerical Computation Of Collection Efficiency In Wire Duct Electrostatic Precipitators

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Industry Applications Conference, 2002. 37th IAS Annual Meeting. Conference Record of the;Publication Date: 2002;Vol: 2,On page(s): 1390- 1396 vol.2;ISBN: 0-7803-7420-7

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Summary

This paper numerically analyzes the collection efficiency associated with wire-duct electrostatic precipitators used in the control of particulates pollution. The finite element method and a modified method of characteristics are used to solve Poisson's equation and to satisfy the current continuity condition, respectively. The two methods are repeated iteratively to obtain a self-consistent solution of the describing equations. Comparing the computed results with previously obtained experimental and calculated values tests the effectiveness of this approach. The agreement with experimental results is found to be satisfactory.

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