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Particle Size Characterization



Ajit Jillavenkatesa Stanley J. Dapkunas Lin-Sien H. Lum

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Materials Science and Engineering Laboratory

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PREFACE

Determination of particle size distribution of powders is a critical step in almost all ceramic processing techniques. The consequences of improper size analyses are reflected in poor product quality, high rejection rates and economic losses. Yet, particle size analysis techniques are often applied inappropriately, primarily due to a lack of understanding of the underlying principles of size analysis, or due to confusion arising from claims and counter-claims of the analytical ability of size determination techniques and instruments.

This guide has been written to address some of these issues and concerns in this regard. The guide is by no means an exhaustive and comprehensive text on particle size analysis, but attempts to convey the practical issues that need to be considered when attempting analysis by some of the more commonly used techniques in the ceramics manufacturing community. The document is written to guide persons who are not experts in the field, but have some fundamental knowledge and familiarity of the issues involved. References to pertinent international standards and other comprehensive sources of information have been included. Data and information from studies conducted at the National Institute of Standards and Technology, and experience gained over years of participation in international round robin tests and standards development, have been used in developing the information presented in this text.

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It is our hope that this guide will be added to and revised over the years to come. Please direct your comments and suggestions for future additions and about this text to:

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