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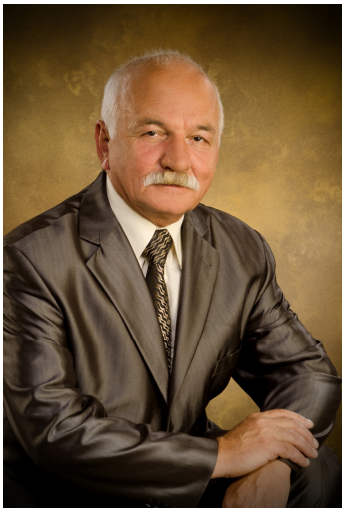

2018 Henry Clifton Sorby Awardee: Professor Jan Ludwik Cwajna

Professor Jan Ludwik Cwajna has been named the 2018 IMS Henry Clifton Sorby Lecturer. Prof. Cwajna is from the Silesian University of Technology (Poland). He is currently on the faculty in the materials engineering and metallurgy department, having previously served as chief of the division of stereology and modelling. He was also head of the division of materials characterization for over 30 years. Prof. Cwajna co-founded the Polish Society for Stereology and served as its president and a board member. In addition, he has been a member of the International Advisory Board of the IMS journal *Materials Characterization.* He is currently secretary of the Committee of Materials Science of the Polish Academia of Sciences and a member of the International Society for Stereology. Prof. Cwajna has published over 200 papers and received numerous awards in his country, including the Silver Badge of Honor for Development of Katowice Province (1976) and the Gold Order of Merit in 2004.

The Sorby Lecture will be presented during MS&T in Columbus, OH, October 14-18, 2018. The title of Prof. Cwajna's talk is Summary of Analysis of Human and Methodological Factors Affecting the Accuracy and Precision of Quantitative Descriptions of the Microstructure of Materials.

Abstract: Human and methodological factors affecting the quantitative description of microstructures will be discussed. The results of the study of 70 various 3D computer- simulated models of the microstructure of polycrystalline materials will be presented. New semi-empirical relationships between parameters for defining the distribution of planar grain section areas and grain volumes was created and are the basis for a simple method for grain size estimation. The importance of proper selection of morphological and stereological parameters is shown on the basis of the improvement in the quantitative description of austenitic steels and sintered carbides microstructure. New empirical relationships between structural factors and properties of these materials are presented. The effect of sample preparation technique, image acquisition and image analysis method on the precision of quantitative description of materials microstructure was analyzed. Examples of complex procedures for quantitative description of microstructure (porosity, grain size, dispersive particles) assuring repeatable results will be presented.