Morphological Classification of Nonferrous Wear Particles in Engine Oil Using Pherrographical Method

Vladimír Hönig
Faculty of Agrobiology, Food and Natural Resources, Department of Chemistry, Czech University of Life Sciences Prague, Kamýcká 129, 165 21, Prague 6 - Suchdol, Czech Republic, E-mail: honig@af.czu.cz

Pherrography uses microscopic methods for the detection of morphological characteristics of wear particles deposited on pherrogram. The result of pherrographical analysis is to create the pherrographic track on pherrogram and then to assign the type and intensity of wear. The position of nonferrous metals on the pherrogram is quite clearly defined. Assessment of particle size, particle shape and distinguishing kinds of material are the result of observation. Nonferrous particles are also divided according to the color. Metal particles can, under certain circumstances, have different colors as a result of excessive oxidation of the particle surface. The article deals with the identification of nonferrous particles on pherrographical track of motor oil. This assessment is carried out in relation to the mode of wear of oil and machine. Part of the experiments is also microchemical analysis for subsequent analysis of certain hard identifiable metals.

Keywords: Pherrography, Engine Oil, Wear Particles, Tribotechnical Diagnosis, Pherrographic Track

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