Microscopes

Microscopes are scientific instruments to examine objects on a very fine scale. This examination can yield the following information:

Topography:

The surface features of an object or “how it looks”, its texture; direct relation between these features and materials properties (hardness, reflectivity...etc.)

Morphology:

The shape and size of the particles making up the object; direct relation between these structures and materials properties (ductility, strength, reactivity...etc.)

Composition:

The elements and compounds that the object is composed of and the relative amounts of them; direct relationship between composition and materials properties (melting point, reactivity, hardness...etc.)

Crystallographic information:

How the atoms are arranged in the object; direct relation between these arrangements and materials properties (conductivity, electrical properties, strength...etc.)