Title (en)

METHOD FOR DETERMINING TRIBOLOGICAL PROPERTIES OF A SAMPLE SURFACE USING A SCANNING MICROSCOPE (SEM) AND ASSOCIATED SCANNING MICROSCOPE

Title (de)

VERFAHREN ZUR BESTIMMUNG TRIBOLOGISCHER EIGENSCHAFTEN EINER PROBENOBERFL CHE MITTELS EINES RASTERKRAFTMIKROSKOPS (RKM) SOWIE EIN DIESBEZ GLICHES RKM

Title (fr)

PROCEDE POUR DETERMINER DES PROPRIETES TRIBOLOGIQUES D'UNE SURFACE D'ECHANTILLON AU MOYEN D'UN MICROSCOPE A BALAYAGE (MEB) ET MICROSCOPE A BALAYAGE ASSOCIE

Publication

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Application

**EP 03792324 A 20030814**

Priority

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Abstract (en)

[origin: WO2004018963A2] The invention concerns a method for examining the surface of samples using a scanning microscope (SEM) comprising a flexible beam with longitudinal extension, whereof the longitudinal measuring tip is arranged precisely relative to a sample surface by means of a fixing device, the spatial position of said measuring tip being sensed by a sensing unit. The microscope is further equipped with at least one ultrasound generator which initiates an oscillation at a give excitation frequency between the sample surface and the flexible beam, whereof the measuring tip is in contact with the sample surface, such that the oscillations imparted to the measuring tip are oriented laterally to the sample surface and perpendicularly to the length of the flexible beam. The torsional oscillations of the flexible beam are sensed and analyzed by means of an evaluation unit. The invention is characterized in that the generation of oscillations is such that the oscillations produced by the measuring tip have a higher harmonic vibration relative to the excitation frequency, the oscillation generation is produced at amplitudes which provoke torsional amplitudes in the flexible beam. Those torsional amplitudes have maximum values which form a substantially constant plateau, even when the torsional amplitudes increase, and, in the range of maximum values, said torsional amplitudes have resonance spectra which develop a dispersion capable of being determined by a plateau width. The method for examining a sample surface consists in using the resonance spectra and, preferably, the plateau value, the plateau width and/or the corresponding resonance spectra increase.

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**G01B 7/00**

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