MSE tester application

Evaluation technique

MSE tester evaluates physical quality level of material by using wear progression degree of item wear erosion generated from solid particle impact (shear test).

Research and development field

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<th>MSE tester</th>
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<tr>
<td>1. Lifetime prediction for cutting tools and grinded tools</td>
<td>MSE tester can provide comparison of cutting quality evaluation of multi-tool testing. And also spot wear strength, surface hardness strength and influence quality measurement. For the same time, MSE tester also can be use together with wear analysis, investigation wear and coated new.</td>
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<td>2. New hard coated thin film material development field</td>
<td>Stated from DLC, the research and development of various hard coated films is already been contact. MSE tester offer hard coated thin film material development fields, faster way to confirm thin film’s physical characteristic. For example, for TiN that films take about 300 sec and DLC about 800 sec in evaluation time.</td>
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<td>3. Hard novel material development field</td>
<td>The development of hard material and high-temperature material for cutting-edge technology such as aerospace and nuclear manufacture are undergoing by using wear rate on physical roles. Better evaluation can be achieve and speed up development progress. MSE tester also contributes to reduce quality of the new material.</td>
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Applications

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<td>1. Research and development field</td>
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<td>2. Thin film manufacture process development field</td>
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<td>3. Sintered material manufacture process development field</td>
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MSE tester application

Research and development field

1. Thin film manufacture process development field
   - The quality of DLC, TiN, etc., is different according to manufacture process. In the other word, the development of high quality thin films basically depends on process development. MSE tester offers a simple evaluation using wear rate on differential determination of the film.

2. Sintered material manufacture process development field
   - Sintering is a material composition technology that sinter fine particle as basic material. MSE tester can use strong support physical and mechanical characteristic part in three eruption for low and micro-sintered development.

Quality guarantee

The problem of the film has been produced by R&D or CSS method is, even if material is similar, but through slight differences of equipment and production management, the property of thin film sometimes effected. As a requirement for similar quality, it is important to increase production at proper similar company and equipment. One of the solution measures for this problem is by using evaluation method by wear mechanism of MSE tester. The standardization item of quality guarantee can use for production and equipment management.

MSE tester

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Manufacture field

Variation inspection of manufacture equipment quality

A tool of MSE’s CSS production equipment is using non-contact techniques that element a variation problem on thin film quality and indiums. For the purpose of observation, by using MSE tester monitoring at machine internal position, countermeasure and evaluation can be taken in advance.

Indirect equipment maintenance by time-series test

The maintenance time of the film manufacture is wide-ranging time at top of this list, but the quality. Because of this, it is important to keep a record of product inspection at time to time to improve or maintain production quality. As an item for that case, physical evaluation data by MSE tester is useful in quality guarantee maintenance while arranging equipment condition.

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