

Mechanical Behavior of Structural Materials

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Keywords Strength of structural materials (18010), Hydrogen embrittlement (26040), Nitriding (26050),



Research Topics

- Development of log saw blades for tissue paper cutting
- Embrittlement of metals by gaseous hydrogen
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Research Seeds

Developed tissue paper log saw blades (see fig.1) with Toyo Knife Co. feature precise, clean cuts and extended cutting longevity. Introducing a new heat treatment process designed for high rotational speeds without edge vibration was brought from our latest research results of materials science and also vibration engineering (please see Dr. Hamanishi's page).

[Seeds: Materials processing for commercial steels: (quench and tempering, nitriding, laser processing)]



Fig. 1 Log saw blade .

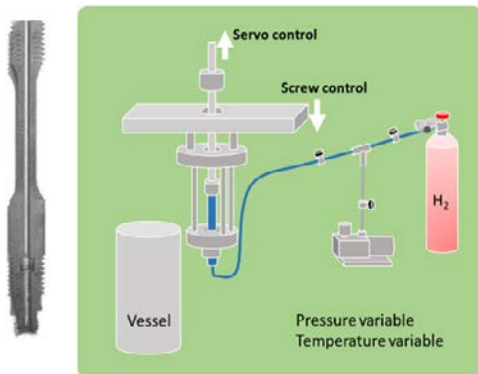


Fig. 2 Hydrogen embrittlement test system.

Hydrogen embrittlement is a complex phenomenon that affects a large class of metals. Our research group (NIT, Sendai and NIMS) uses novel testing method (see Fig. 2) developed by Dr. Ogata (NIMS) to evaluate the effects of gaseous hydrogen on mechanical properties of structural materials for hydrogen station and/or aerospace applications.

[Seeds: mechanical testing at various environments]

Related Technology

- Mechanical properties measurement system
- Laser processing machine