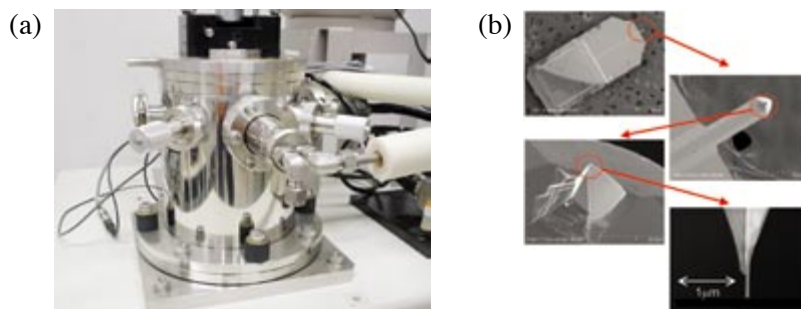


## Development of Magnetic Force Microscope with World Finest Resolution

While the development of new generation magnetic storage medium requires an instrument to characterize magnetic nanostructures finer than 20 nm, none of standard apparatus with such performance was available. New magnetic force microscope (MFM) and the MFM probe have been successfully developed. The probe was fabricated by use of carbon nanotube and technology for vapor

depositing magnetic materials, leading to characterization of magnetic storage medium with 10 nm resolution. The newly developed MFM is expected to become a powerful research tool in areas of magnetic storage and spin electronics. This work was performed in AIST in collaboration with SII Nanotechnology and Fujitsu Ltd. under Nanotechnology program, NEDO.

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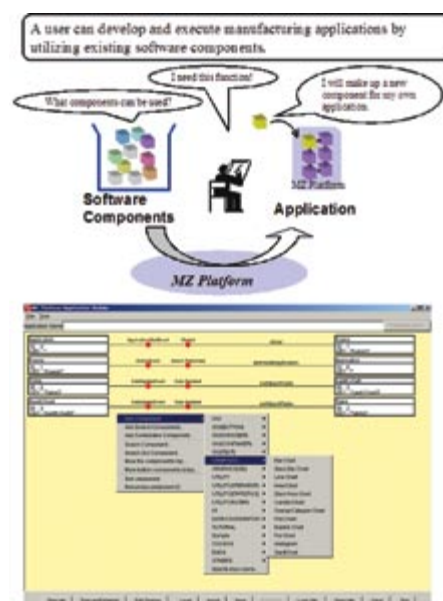


(a) A newly developed magnetic force microscope. (b) SEM images of the new MFM probe. Red arrows mean the expansion of the image. The thin segment represents the carbon nanotube coated with a magnetic film. The diameter is about 40nm

## Mechanical Engineering and Manufacturing Technology

### MZ Platform: Design and Manufacturing Software Development System

Systematization and digitization of manufacturing processes by introducing information technology (IT) tools is regarded as a key approach for increasing manufacturing companies' competitiveness. In order to support them to build manufacturing software applications for their own use, we have developed a component-based software development framework, named "MZ Platform". It provides manufacturers with a set of software components that carry out unit functions. Users can develop an IT tool by integrating those small software components into a large software system. Its advantage of reducing the time and the cost of building manufacturing software system has been proven through several case studies.



Outline of MZ-Platform

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