

36-50 A Nano-probing system for Measurement of Micro-Device

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In recent years, the integration of semiconductor devices has been rapidly advanced according to the Moore's law. However, the measurement technology may not necessarily follow the speed of the advance. For example, a formation of pad-electrodes is essential for measuring the electrical characteristics of micro-devices. The size of pad-electrodes generally used is several tens μm , although the device dimension has already reached sub $1\ \mu\text{m}$ range. The dimensional mismatch is due to the poor precision in the positional control of the probe manipulator, the large tip size of the probe, and the low observational resolution of the probing system. In order to measure the characteristics of micro devices without the parasitic influence of the pad-electrode, it is preferable to contact the probe directly to the each terminal of the device without formation of extra pad-electrodes.

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