

## Discovery of Friction-Generated Micro-Plasma

- With a Comet-like Propagation Pattern Around the Contact Point -

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We discovered a microplasma generated in a gap of sliding contact and achieved a world-first success in total micro-plasma imaging. We proposed its existence previously (Fig.1) and proved finally the hypothesis. It had a comet like shape with a tail and a horseshoe pattern on it (Fig.2). It was generated even under such extremely low load as 3g and low friction speed as 2 cm/s. It is generated for almost all materials of insulators, semi-conductors and metal oxide films. This means that we are always with the microplasma in our daily life and in industry.

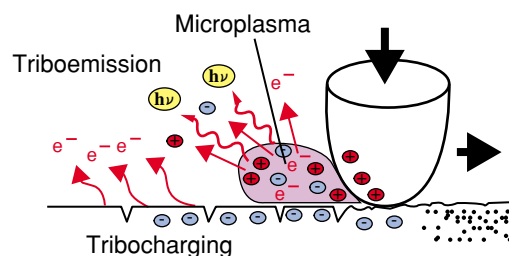


Fig.1 Gas-discharge plasma model

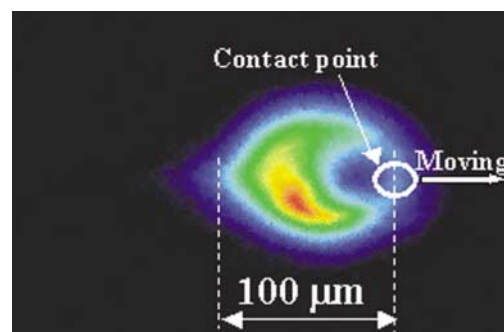


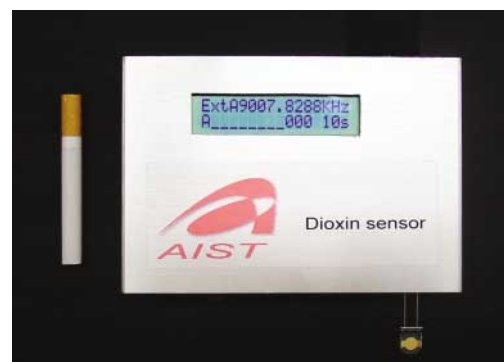
Fig.2 UV Plane image of plasma

## Development of a Novel Determination Method for Dioxin Concentration

- Enables More Accurate and Rapid Dioxin Determination than Using the JIS Method -

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The Institute for Environmental Management Technology and Human Stress Signal Research Center of the National Institute of Advanced Industrial Science and Technology (AIST) succeeded in rapid and accurate determination of dioxin concentration in actual environmental samples (fly ash from waste incinerators extracted and cleaned up with an accelerated solvent extractor) using QCM sensors. This development enables highly accurate and rapid dioxin determination in proportion to the GC/MS method in the JIS standard. It is hoped that it will make on-site determination of dioxins possible.



Photograph of the dioxin sensor using QCM method