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Water vapor visualization system

[Keywords] water vapor, IR, measurement

Summary of this Invention

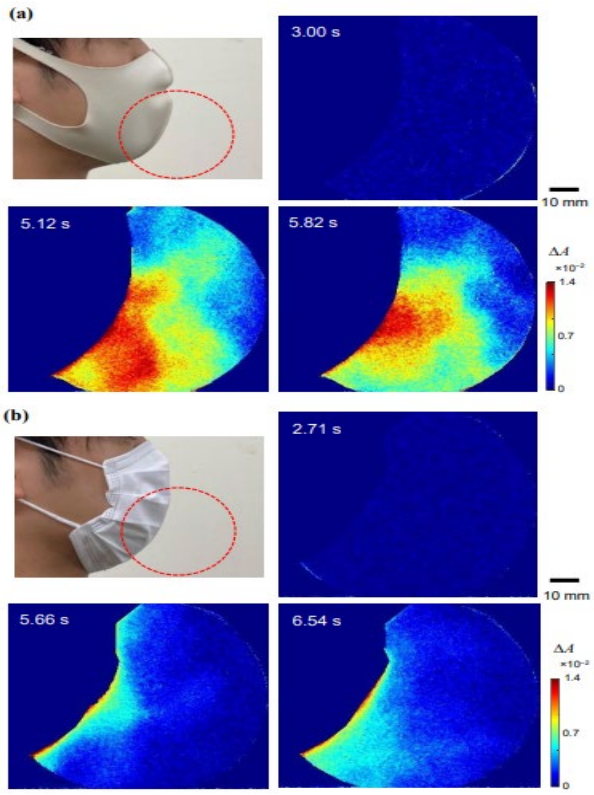
This invention enables measurement of the distribution of water vapor in an open space using a near-infrared laser. The distribution of the degree of absorption of water vapor in the measurement space is derived from the data captured by the near-infrared camera by magnifying the measurement space.

As the optical system does not have a any physical drive part, measurement is stable and accurate. By Using a near-infrared laser, inexpensive lens can be applied and it serves cost advantage of whole system.

Uses of this Invention

Since this invention enables to visualize the spatial distribution of water vapor in real time, it is expected to be used in sites where strict humidity control room and measurement and control of water vapor flow are required.

For example, pipe network inspection, humidity control room for semiconductor factory and material permeability, evaporation, moisturizing properties evaluation can be targets area.



Experiment :
comparison of water vapor distribution through urethane mask(a) and unwoven mask(b).

The Laboratory

Prof. Kakuta is researching the elucidation of thermal mass transfer phenomena in the micro region and their engineering applications. Based on thermal engineering and optical engineering, we are engaged in original research that utilizes knowledge and technology in various fields.

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