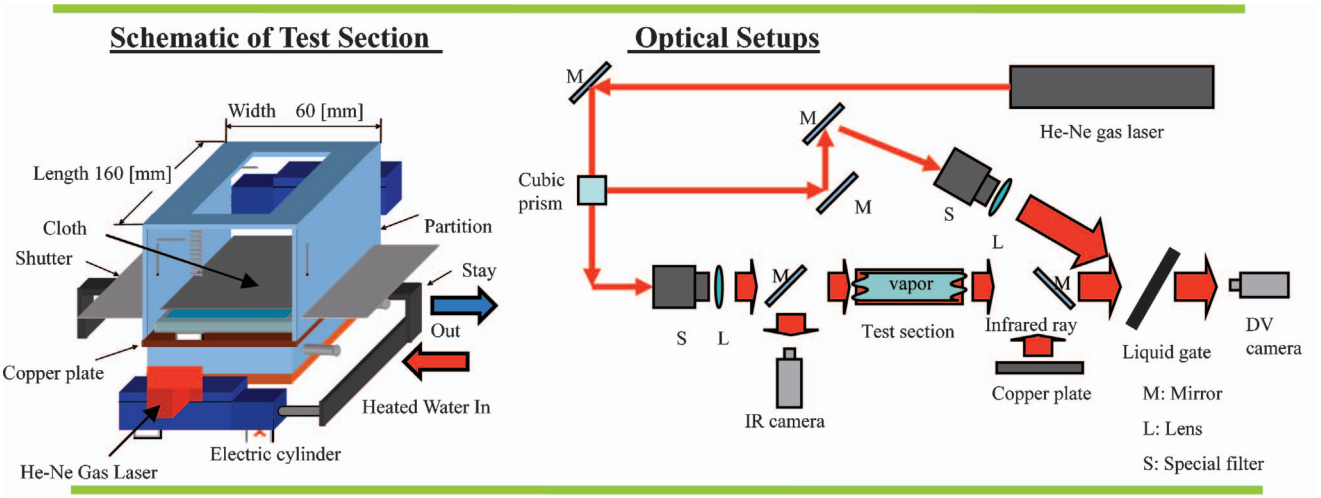

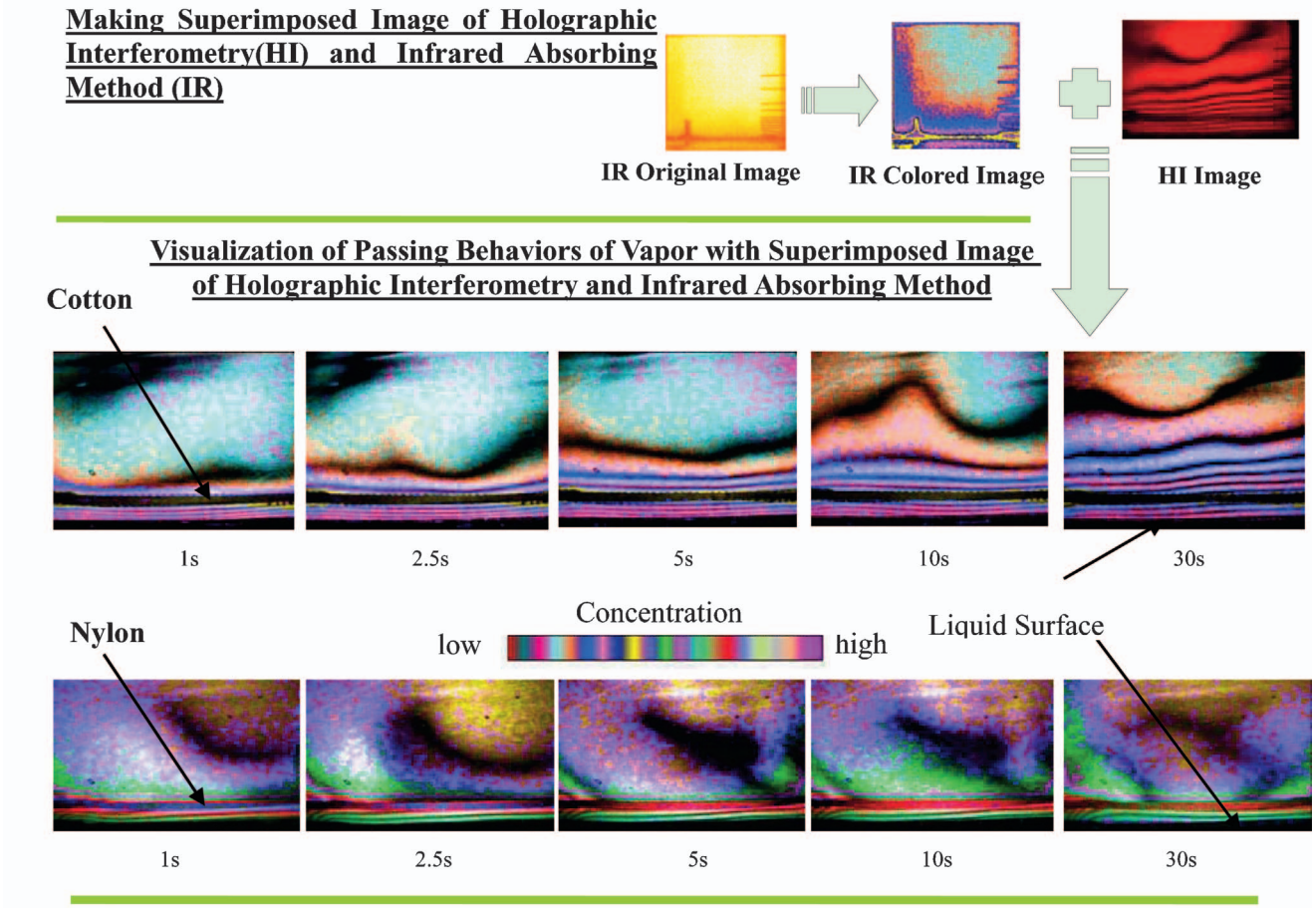

The Passing Behaviors of Vapor through Cloth

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There occurs heat and mass transfer through cloth in the very small space from skin to the outside of cloth due to the release of heat and sweat evaporation from human body. The new simultaneous 2-D measurement technique of temperature and concentration distributions that combines infrared absorbing method (IR) with holographic interferometry (HI) was applied to this space. Cotton (porosity Φ=0.586, thickness t=324μm) and nylon (Φ=0.578, t=347μm) were used for the typical hydrophilic and hydrophobic clothes, respectively. N-propanol was used for liquid. The distance from liquid surface to cloth was 5mm. Liquid temperature was 40°C. The superimposed images of HI and IR show clearly that more vapor passes through cloth in the case of cotton than in the case of nylon. This fact demonstrates that this new technique is very useful for measuring the passing behaviors of vapor through cloth.

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