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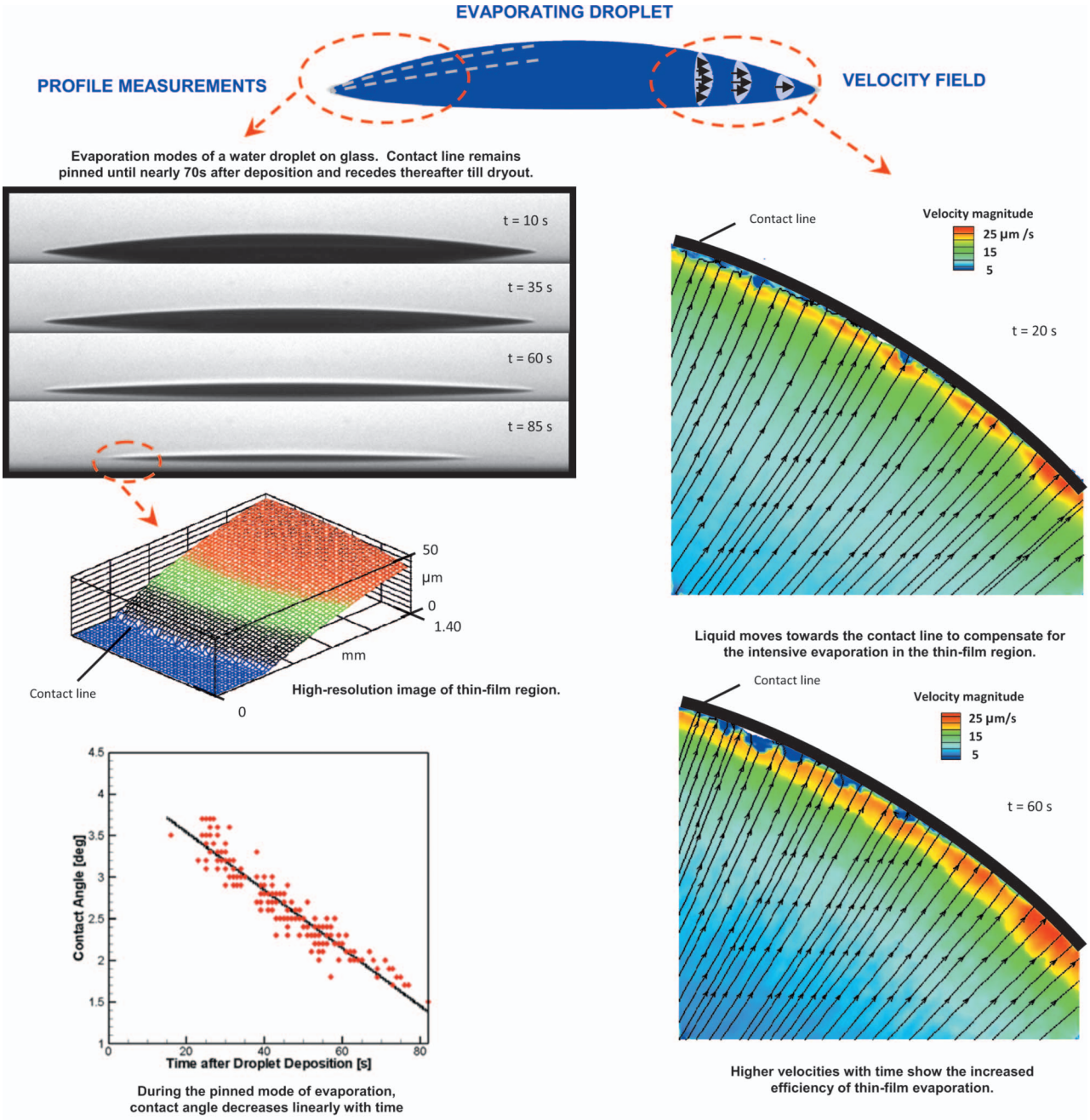

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Thin-film evaporation – the evaporation taking place near a solid-liquid-vapor junction – has long been believed to be the dominant mode of heat transfer in two-phase heat transfer systems. Evaporation of droplets is important in many applications such as coating, printing, spraying and dropwise condensation. Small (0.5 μl) water droplets evaporating on glass slides are studied. Three distinct modes of evaporation are observed: (1) the contact line remains pinned and the contact angle decreases progressively (4.5 to 0.7 deg), (2) the contact line recedes suddenly, and (3) complete dryout occurs. A high-resolution optical interferometer (0.1 nm in z-direction) is used to resolve the transient droplet profiles in the thin-film region. Micro-particle image velocimetry measurements of the flow field generated near the thin-film region are obtained. The liquid flows from the center of the droplet to the thin-film region to replenish the evaporating liquid.