

||||| 小特集 2 : 流体の不安定性 |||||
(解説)

固液気境界線 (コンタクトライン) 近傍流体のダイナミクス

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Dynamics of the Fluid in the Vicinity of the Solid-liquid-gas Boundary Line ('Contact Line')

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Abstract

Moving 'contact line' as the boundary line of solid-liquid-gas interface is so familiar phenomenon in a daily lives; such as sliding rain droplet on the window, advancing wine in the glass in drinking it, falling droplet on your body in taking a shower, etc. Such phenomena can be often seen also in industrial situations; coating of the solid surface by a liquid film, extending a dry patch in a liquid film on the heated surface in a heat exchanger, growing bubble and rewetting after the bubble detaching on the solid surface in boiling phenomena, and so on. A large number of experimental and theoretical researches have been conducted upon the moving contact line, and they have indicated that there exists a precursor thin liquid film preceding the advancing bulk liquid film or droplet. The dynamics of the fluid in the vicinity of the contact line region, however, is not understood at all. In the present manuscript, typical phenomena concerning the moving contact line and the preceding works in this field are abstracted, and then the latest topics by the present authors' group are introduced.