MECHANICS OF FLUID SUSPENSION—A NEW INTERDISCIPLINARY SCIENCE

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Abstract This review gives an outline of a new interdisciplinary science——the mechanics of fluid suspension. It emerges and develops in the intersecting front of the low Reynolds number hydrodynamics and the colloidal science. It has a wide practical application and also posses many important fascinating theoretical problems. The research effort in this area is massive over recent years. Many significant achievements have been obtained. For those interested in this subject, this is really a stimulating period. After describing its basic features and the main fields this paper makes a review of the recent advances in the kinetics of the suspended interacting particles at low Reynolds number, low Stokes number and large Knudsen number, the relative Brownian diffusion in a homogeneous suspension and the gradient Brownian diffusion in an inhomogeneous monodisperse or polydisperse system, the sedimentation of particles under gravity in a dilute monodisperse or polydisperse system, the coagulation of particles both due to Brownian motion and due to gravitational settling or a pure straining motion, the effective viscosity of a suspension at either large Peclet number or small Peclet number.

Keywords *mechanics of fluid suspension; microhydrodynamics; colloidal sciences; low Reynolds number; multiphase flows*

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会议由香港大学机械系承办．征文范围：边界层，射流和尾流，激波与流动相互作用，涡旋流，内部流，湍流和湍流模拟，非定常流；水力学和海岸工程；工业空气动力学，钝体和高耸建筑的绕流；多相流和非牛顿流；地球物理流体动力学，波，空气和水的污染；数值和计算流体力学；实验方法，仪器，数据收集和分析；传热传质，燃烧；流体-结构相互作用，流致噪声和振动；造船和海洋工程，近海工程；生物力学，血液流动．论文英文详细摘要一式三份需于1988年3月31日以前寄到**北京中关村中国科学院力学研究所林同骥**教授处．如想了解会议的其他有关情况，可与北京中关村中国力学学会办公室联系．

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