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**Effect of Shear Flow on Morphology Development near Critical Point of Phase Diagram in Polymer Blend** TOSHIAKI OUGIZAWA, MACHIKO NAITO, Tokyo Institute of Technology — The effects of simple shear flow on the phase behavior and morphology near critical point of phase diagram were investigated by a rotational parallel-plates apparatus for a blend of poly(methyl methacrylate) (PMMA)/poly(styrene-*co*-acrylonitrile)(SAN29, 29wt%AN) which has a Lower Critical Solution Temperature-type phase diagram. In the two phase region near critical point, for the parallel direction to the shear flow, the highly elongated morphology was observed by a transmission electron microscope. However, for the perpendicular direction, very fine co-continuous morphology which has size less than 100nm was observed in spite of shear flow field. It was considered that this morphology was formed by elongating modulated structure which was formed by the conventional spinodal decomposition (SD). The coarsening behavior from this fine morphology after shear cessation took place competing with usual SD. However, SD was superior and finally the shear memory for morphology disappeared.

Toshiaki Ougizawa  
Tokyo Institute of Technology

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