〔Intern. J. Pharmaceutics, **75**, 25-36 (1991)〕 [Lab. of Pharm. Engineering]

Preparation and characterization of a new controlled release ibuprofen suspension for improving suspendability.

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A new controlled release suspension of ibuprofen was developed by using ibuprofen microspheres with an acrylic polymer (Eudragit RS-PM™). Uniform dispersibility of the microspheres for a period of more than 6 months could be obtained in a low viscous acidic solution of sodium carboxymethylcellulose (CMC) by the addition of D-sorbitol. The presence of D-sorbitol in the acidic medium increased the adsorbed amount of CMC on the microspheres and contributed to build the loose three-dimentional networks of CMC.

〔J. Colloid Interface Sci., **145**, 512-523 (1991)〕 [Lab. of Pharm. Engineering]

Shear-Induced Phase Inversion and Size Control of Water/Oil/Water Emulsion Droplets with Porous Membrane.

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A water/oil/water (w/o/w) emulsion was prepared with liquid paraffin, hydrophobic (Span 80) and hydrophilic (Tween 20) surfactants. When the emulsion was extruded through a polycarbonate membrane possessing pores of 3 or 8 μm in diameter, the extruded emulsion became semisolid. This semisolid emulsion proved to be a w/o emulsion judging from dispersibilities into water and chroloform, changes in percentages of trapped markers initially added to inner and outer aqueous phases, and observation of electron microscopic photographs.

〔J. Soc. Powder Technology., **28**, 562-566 (1991)〕 [Lab. of Pharm. Engineering]

Particle Design of Adhesive Pharmaceutical Powders for Direct Tabletting by the Novel Emulsion-Solvent-Diffusion Method.

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The novel emulsion-solvent-diffusion technique developed by the authors was proved to be a versatile particle design method to improve the particulate properties of adhesive pharmaceutical powders for direct tabletting, irrespective of the crystallization solvent system employed, viz. miscible or immiscible good-poor solvent system. The spherically designed agglomerates of the crystals with the miscible solvent system were free flowing and easily packable into a die, which were directly compressed into a tablet without any capping even at higher compression pressure.