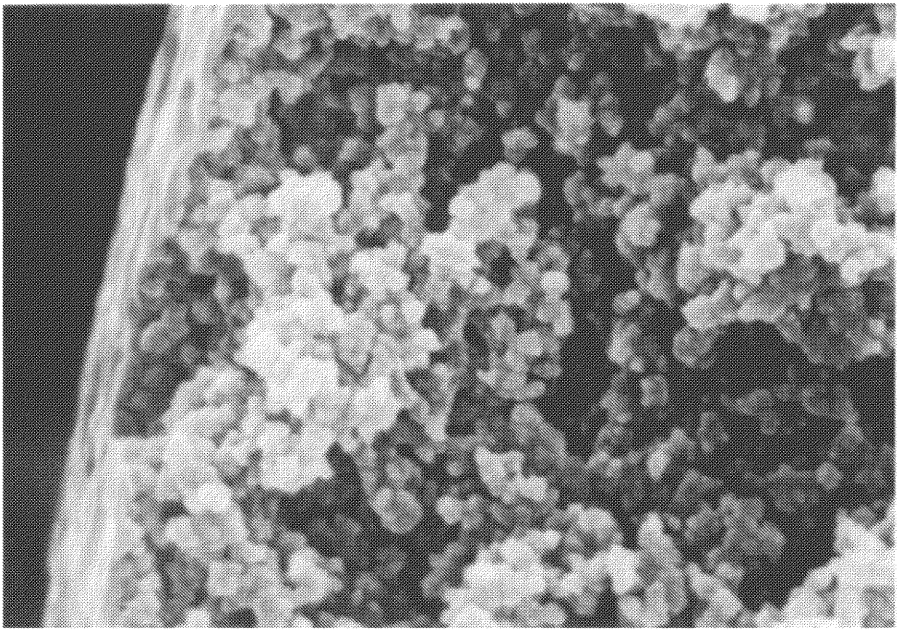

(F)

Figure 15.1 (Continued)

these cases, an inert liquid, fully miscible with the monomers but immiscible with water, is used during polymerization to form the pore network. The liquid that has served as a porogen and occupies the pores of the formed particles can then be removed leaving preformed dry microspheres.

Subsequently, placement of the functional substance inside the reservoirs may be achieved by impregnation of the preformed dry porous polymer particles according to techniques, such as contact absorption, assisted, when necessary, by solvents to enhance the absorption rate. The final product is thus prepared in two sequential steps. First, polymerization is performed using the substitute porogen. This substitute is then removed and replaced by the functional substance.

Materials suitable as substitute porogens are liquid substances meeting the foregoing criteria and having the further characteristic of being readily extracted from the particles' pore network once polymerization is complete. This covers a wide range of substances, in particular inert, nonpolar organic solvents.