WELL TOOLS UTILIZING SWELLABLE MATERIALS ACTIVATED ON DEMAND

A well tool includes a generally tubular mandrel with a flow passage extending longitudinally through the mandrel, and a flow controller which initially prevents a fluid from contacting a swellable material, but which permits the fluid to contact the material in response to manipulation of pressure in the flow passage. Another well tool includes a swellable material, a generally tubular mandrel, and a conduit wrapped circumferentially about the mandrel, the conduit containing a fluid which, upon contact with the swellable material, causes the material to swell. A method of actuating a well tool in a well includes manipulating pressure in a flow passage extending through a tubular string, thereby opening at least one flow control device of the well tool which selectively permits fluid communication between a reservoir of the well tool and a swellable material of the well tool, whereby a fluid in the reservoir contacts the swellable material.

[Figure.3]