1023-35-1329 **Divya E. Vernerey*** (d-devadoss@northwestern.edu), Northwestern University, Engineering Sciences & Applied Mathematics, 2145 Sheridan Road, Evanston, IL 60208, and **Esteban Urdiales** and **Vladimir A. Volpert**. *Mathematical Modeling of Frontal Polymerization with Encapsulated Initiators.* Preliminary report.

Frontal polymeriztion (FP) is a process that converts monomers into polymers via a propagating spatially localized reaction front. In the simplest case, a mixture of monomers and initiators are placed into a test tube and upon initiation of the reaction at one end of the tube, a self-sustained wave develops and propagates through the tube. Unfortunately, the pot life of the system is decreased due to the decomposition of the initiators. To alleviate this problem, the initiators are encapsulated. In this work a mathematical model that describes FP with encapsulated initiators is presented and studied, both numerically and analytically. (Received September 25, 2006)