1125-35-2320 **Ugur G. Abdulla** and **Roqia A. Jeli*** (rjeli2011@my.fit.edu). *Evolution of Interfaces for the Nonlinear Parabolic p-Laplacian Type Reaction-Diffusion Equations.*

We present a full classification of the short-time behaviour of the interfaces and local solutions to the nonlinear parabolic p-Laplacian type reaction-diffusion equation of non-Newtonian elastic filtration

$$u_t - \left(|u_x|^{p-2}u_x\right)_x + bu^\beta = 0, p > 2, \beta > 0$$

The interface may expand, shrink, or remain stationary as a result of the competition of the diffusion and reaction terms near the interface, expressed in terms of the parameters $p, \beta, sign\ b$, and asymptotics of the initial function near its support. In all cases, we prove the explicit formula for the interface and the local solution with accuracy up to constant coefficients. The methods of the proof are based on nonlinear scaling laws, and a barrier technique using special comparison theorems in irregular domains with characteristic boundary curves. (Received September 20, 2016)