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Tor A. Kwembe (tor.a.kwembe@jsums.edu), P.O. Box 17610, Department of Mathematics, Jackson State University, Jackson, MS 39217, and Zhenbu Zhang* (zhenbu.zhang@jsums.edu), P.O.Box 17610, Department of Mathematics, Jackson State University, Jackson, MS 39217. Blow-up properties for a semilinear reaction-diffusion system. Preliminary report.

In this paper we consider a weak coupled semilinear parabolic system with general Wentzell boundary condition. We prove the local well-posedness of the problem and derive the conditions for global existence and finite time blow-up. We will also derive some estimates for blow-up time. (Received September 20, 2010)