1069-35-340 **Tae Gab Ha*** (tgha78@gmail.com), Ames, IA 50011. *General stabilization for the wave equation with boundary damping and source terms.*

In this talk, we are concerned with existence solutions and energy decay rates of the wave equation with

$$\begin{cases} u'' - \Delta u + p(u) = 0 \quad \text{in} \quad \Omega \quad \times \quad (0,+\infty), \\ u = 0 \quad \text{on} \quad \Gamma_0 \quad \times \quad (0,+\infty), \\ \frac{\partial u}{\partial \nu} + q_1(u') = |u|^\beta u \quad \text{on} \quad \Gamma_1 \quad \times \quad (0,+\infty), \\ u(x,0) = u^0(x), \quad u'(x,0) = u^1(x), \quad x \in \Omega, \end{cases}$$

where Ω is a bounded domain of $\mathbb{R}^n (n \geq 1)$ with boundary $\Gamma = \Gamma_0 \cup \Gamma_1$ of class C^2. Here , $\Gamma_0 \neq \emptyset$, Γ_0 and Γ_1 are closed and disjoint. Let ν be the outward normal to Γ. Δ stands for the Laplacian with respect to the spatial variables and $'$ denotes the derivative with respect to time t.

This work is devoted to prove the existence of global solutions using a potential well method and uniform decay rates of solutions of the wave equation without imposing any restrictive growth assumption on the damping term near zero. (Received January 25, 2011)