In this paper, we study the nonlinear degenerate parabolic initial-boundary value problems:
\[ u_\tau = \left( \xi^r u^m u_\xi \right)_\xi / \xi^r + f(u) \]
for \(0 < \xi < a, 0 < \tau < \Lambda \leq \infty\), \(u(\xi, 0) = u_0(\xi)\) for \(0 \leq \xi \leq a\), and \(u(0, \tau) = u(a, \tau) = 0\) for \(0 < \tau < \Lambda\), where \(a\) and \(m\) are positive constants, \(r\) is a constant less than 1, \(f(u)\) is a positive function such that \(\lim_{u \to c^-} f(u) = \infty\) for some positive constant \(c\), and \(u_0(\xi)\) is a given function satisfying \(u_0(0) = 0 = u_0(a)\). In this paper, we study the quenching rate and quenching set of the solution. (Received January 13, 2011)