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***Classical global solutions of the initial boundary value problems for a class of nonlinear parabolic equations***

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**Abstract:** The existence, uniqueness and regularities of the generalized global solutions and classical global solutions to the equation

$$u_t = -A(t)u_{x^4} + B(t)u_{x^2} + g(u)_{x^2} + f(u)_x + h(u_x)_x + G(u)$$

with the initial boundary value conditions

$$u(-\ell, t) = u(\ell, t) = 0, \quad u_{x^2}(-\ell, t) = u_{x^2}(\ell, t) = 0, \quad u(x, 0) = \varphi(x),$$

or with the initial boundary value conditions

$$u_x(-\ell, t) = u_x(\ell, t) = 0, \quad u_{x^3}(-\ell, t) = u_{x^3}(\ell, t) = 0, \quad u(x, 0) = \varphi(x),$$

are proved. Moreover, the asymptotic behavior of these solutions is considered under some conditions.

**Keywords:** nonlinear parabolic equation, initial boundary value problem, classical global solutions

**AMS Subject Classification:** 35K35, 35K60