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Blow-up for a semilinear parabolic equation with nonlinear memory and nonlocal nonlinear boundary. (English) [Zbl 1276.35041](#)

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Summary: We study a semilinear parabolic equation

$$u_t = \Delta u + \int_0^t u^p ds - ku^q, \quad x \in \Omega, \quad t > 0$$

with boundary condition $u(x, t) = \int_{\Omega} f(x, y)u^l(y, t)dy$ for $x \in \partial\Omega, t > 0$, where $p, q, l, k > 0$. The blow-up criteria and the blow-up rate are obtained under some appropriate assumptions.

MSC:

[35B44](#) Blow-up in context of PDEs

[35K58](#) Semilinear parabolic equations

[35K61](#) Nonlinear initial, boundary and initial-boundary value problems for nonlinear parabolic equations

[35R09](#) Integro-partial differential equations

Cited in **5** Documents

Keywords:

[blow-up criteria](#); [blow-up rate](#)

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