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John R Graef and **Bo Yang*** (byang@kennesaw.edu), Department of Mathematics, Kennesaw State University, Kennesaw, GA 30144. *Positive Solutions of a Nonlinear Fourth Order Boundary Value Problem.*

The authors consider the nonlinear fourth order boundary value problem

$$u''''(t) = g(t)f(u(t)), \quad 0 \leq t \leq 1,$$

$$u(0) = u''(0) = u'(1) = u''(1) = 0,$$

where $g : [0, 1] \rightarrow [0, \infty)$ and $f : [0, \infty) \rightarrow [0, \infty)$ are continuous functions. They give sufficient conditions for the existence and nonexistence of positive solutions to this problem. An example is given to illustrate the main results. (Received September 28, 2005)