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Inverse problems are one of the oldest most important mathematical problems in science and engineering. However, the field of inverse problems has undergone rapid development in last two decades due to the massive increase in computing power and the development of powerful numerical techniques such as finite difference method, finite element method, finite volume method, and spectral method. In this article, we consider an Initial Boundary Value Problem (IBVP) with time dependent parameter and a source function. We use over-specified condition and a pair of transformations to transform the given IBVP free from parameter. We then use the Crank-Nicolson method to estimate the parameter. We develop computational algorithms and display numerical results. We present examples to test the accuracy of the scheme. (Received September 25, 2018)