J. A. Tenreiro Machado, Ramiro S. Barbosa, Isabel S. Jesus, Manuel F. Silva, Cecília M. Reis, Maria G. Marcos, Luís M. Afonso, Alexandra F. Galhano, Miguel F. M. Lima, E. J. Solteiro Pires, N. M. Fonseca Ferreira; Towards the Application of Fractional Calculus in Engineering Science; Symposium on Applied Fractional Calculus, Industrial Engineering School, University of Extremadura, Spain, October 15-17, 2007, CD-ROM.

Abstract: This article illustrates several applications of Fractional Calculus (FC) in engineering sciences. This mathematical tool will be used here to model, analyze and control various dynamical systems, such as the Van der Pol oscillator, legged robots, electrical systems, digital circuit synthesis, evolutionary computing, redundant robots and financial modelling. Their effectiveness and utility will be demonstrated.