

Electro-Thermal Analysis of Nylon Spring

Juraj Paulech^{1, a)}, Justín Murín¹, Vladimír Kutiš¹, Vladimír Goga¹
and Gabriel Gálik¹

¹*Department of Applied Mechanics and Mechatronics, Institute of Automotive Mechatronics,
Faculty of Electrical Engineering and Information Technology, Slovak University of Technology in Bratislava,
Ilkovičova 3, 812 19 Bratislava, Slovak Republic.*

^{a)} Corresponding author: juraj.paulech@stuba.sk

Abstract. The paper presents an academic example for direct internal electrical heating for nylon springs that act as springs with negative thermal expansion. Dynamics of such heating and cooling cycles will be also presented. Advantages and disadvantages of the proposed system will be discussed.