

self-expandable, the presence of the balloon in stents eliminates due its problems like designing, material properties and dimension of balloons. In this study, we focused on shape memory polymers which have lots of advantages in comparison with shape memory alloys such as high elastic deformation, excellent processability, light weight, low cost, low density, and potential of biocompatibility so they have become a proper candidate for implant materials. It has been found that mechanical properties of polymeric materials can be improved by introducing a uniform dispersion of nanoparticles. The main goal of this paper is to describe the progressive self-expansion shape memory Polyurethane/Polycaprolactane-ZnO nano-composite blends. Fabrication of self-expanding stents and applying them in body temperature conditions will be discussed in details.

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#### FABRICATION OF SMART SELF-EXPANDING BIOCOMPATIBLE STENTS IN BODY TEMPERATURE

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Stent implantation has attracted significant attention since the urgent need of coronary angioplasty as the most common cause of heart attacks. Shape memory materials are able to have two shapes at different conditions. Since the smart materials are