

EG0700337

**8th ARAB INTERNATIONAL CONFERENCE ON
POLYMER SCIENCE & TECHNOLOGY**

27 – 30 November 2005, Cairo-Sharm El-Shiekh, EGYPT

**Preparation and Evaluation of Some Investigated Natural and
Acrylonitrile Rubber Vulcanizates for Physiotherapeutic Purposes**

F. M. Helaly and S.M. El-Sawy

*Polymers and Pigments Dept; National Research Centre Dokki, Cairo,
Egypt*

A trial was made to design and prepare rubber article that can be used to reactivate, strengthen and reinforce the hand muscles and fingers which had suffered from trouble movement. The investigated rubber article was prepared from natural and acrylonitrile rubber formulations. These formulations were processed in the form of compounds which contain significant quantities of fillers as Hisil, CaCO₃ and TiO₂. The rheological characteristics and physicochemical properties of the vulcanizates were determined according to standard tests. It was found that it is possible to prepare the designated rubber article for the desired purpose. The test results show that the prepared rubber article has a good chemical resistant against acid, alkali, and salt. Also it possesses high resistance to deterioration and deformation. The prepared article has an ability to retain its elastic property after the action of compressive forces at 70°C for 24 hrs. This was confirmed with applied commercial hand exercise therapeutic article.