

Non-Evaporable Getters : from Pumping Strips to Thin Film Coatings, C. BENVENUTI, CERN - About 25 years ago, a study on the ultra-high vacuum behaviour of Non-Evaporable Getters (NEG) strips was undertaken at CERN. The resulting knowledge not only allowed NEG pumping to be successfully adopted for the LEP vacuum system, but was also essential for the development of niobium coated RF superconducting cavities later used to upgrade LEP energy. Niobium is a powerful getter and its purity is mandatory to obtain superconducting cavities of the desired quality. Therefore stringent precautions must be adopted both for preparing the copper surface and for the coating process itself. Very recently, the NEG pumping and the Nb coating techniques have been combined to produce thin film NEG coatings. Vacuum chambers sputter-coated with a thin film of a suitable getter material may be transformed from a gas source into a pump by activating the getter coating during standard "in situ" bakeout. As a result, the surface cleaned by this activation process presents a strongly reduced pressure rise under photon and/or particle bombardment. The material selection criteria, the coating procedure and the main results so far obtained are presented and discussed in view of the potential benefits of NEG coatings for accelerator vacuum systems.