

On The Accuracy of Track Diameter Measurement in CN-85

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ABSTRACT

Cellulose nitrate CN-85 (manufactured by Kodak-Path) was used as Solid State Nuclear Track Detectors (SSNTD's) in the present work. The relation between track diameter and both etching time and energy of alpha particles was studied with the given processing parameters. Also the response curve was studied regarding the relation between growth of diameter (V_d) and both etching time and energy of alpha particles. An explanation of the result is discussed.

INTRODUCTION

The CN-85 plastic track detector (manufactured by Kodak Path-France) has been used to study the response to alpha particles were obtained from ^{241}Am source (supplied by the Radioactive Ltd., Amersham, England.) [1-3]. Recent years have seen an increasing use of (SSNTD's) in a variety of fields such as cosmic rays, nuclear reactions, space research and dosimetry applications [4-6]. (SSNTD's) besides having the above mentioned important characteristics they are: a- inexpensive b- easy to use c- among the best available integrating type of charge particle detectors, and d- highly sensitive to light charged particles such as protons and alphas, over a wide energy range [7].

To study the response of CN-85 we exposed many sheets to vertically incident alpha particles and from the track diameter measurements, a response curve and verification of the good uniformity of the material is obtained.

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