ICCHIBAN CALIBRATIONS AND INTERCOMPARISONS: Loma-Linda, ICCHIBAN-6 and NSRL-BNL

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The Radiation and Environmental Physics Department of the Atomic Energy Research Institute (Hungarian Academy of Sciences) participated in three ICCHIBAN experiments in 2003 and 2004. The detectors exposed to different HZE particles and proton radiation were treated in a standard way: etched in 6 n NaOH at 70 ^{o}C for 6 and 15 hours, to distinguish low and high LET particles. The etched detectors were investigated by the improved version of the VIRGINIA image analyzer, developed by the Research Institute for Technical Physics and Material Science. Control evaluations were made in Caracas by the team of Nuclear Physics Section of the University Simon Bolivar.

During the 10th WRMISS meeting, the composition of the detector stacks, the evaluation method, including the introduction of the renewed image analyzer will be presented, at first. It will be followed by the two new calibration curves (for 6 and 15 h etching) obtained. The results of the "unknown" exposures will be summarized in tables. And finally, few LET spectra, deduced from measurements of the detectors exposed on the ISS in 2003 will be given. The effect of the modification of the calibration curve on the LET spectra will be discussed.

The picture below shows one page of the "track galery", the detector was exposed to unknown radiation during the NSRL-BNL and etched for 6h. This program menu of the VIRGINIA image analyzer enables the operator to verify the acceptance of a track as a member of the a specified "class". Any of the tracks can be transferred to any another "class".

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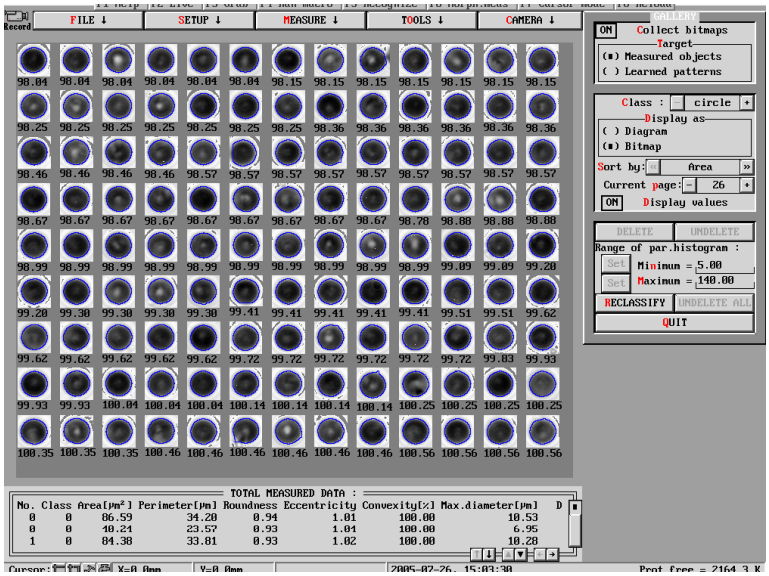
Record
FILE ↓
SETUP ↓
MEASURE ↓
TOOLS ↓
CAMERA ↓
GALLERY
ON
Collect bitmaps
Target
(■) Measured objects
( ) Learned patterns
Class :
circle
Display as
( ) Diagram
(■) Bitmap
Sort by:
Area
Current page:
26
ON
Display values
DELETE
UNDELETE
Range of par.histogram :
Set
Minimum = 5.00
Set
Maximum = 140.00
RECLASSIFY
UNDELETE ALL
QUIT
TOTAL MEASURED DATA :
No. Class Area[µm²] Perimeter[µm] Roundness Eccentricity Convexity[%] Max.diameter[µm] D
0 0 86.59 34.20 0.94 1.01 100.00 10.53
0 0 10.21 23.57 0.93 1.04 100.00 6.95
1 0 84.38 33.81 0.93 1.02 100.00 10.28
Cursor:
X=0 0µm
Y=0 0µm
2005-07-26, 15:03:30
Prot free = 2164.3 K