EXPERIMENTAL STAND FOR MICROSTRIP DETECTORS TESTING

S.A.Khusainov, V.V.Kuryatkov

It is important to control parameters of strip matrix in producing microstrip silicon detectors. Each detector contains 1024 strips on sensitive area of (40×40) mm^2 with pitch 25 μm. The automatized stand for testing such detectors has been developed. The stand is driven by PC (DVK-3) through "CAMAC". The applied software has been developed and enables:

— research of J—V characteristics under direct and reversal bias voltage;
— control of single strip efficiency with state automatic scanning conditions;
— testing single strip efficiency with lighting in automatic scanning conditions;
— research of V—F—characteristics of microstrip detectors;
— accumulation, representation, analysis, treatment and hard coping of the data obtained.

Technical characteristics and composition of stand

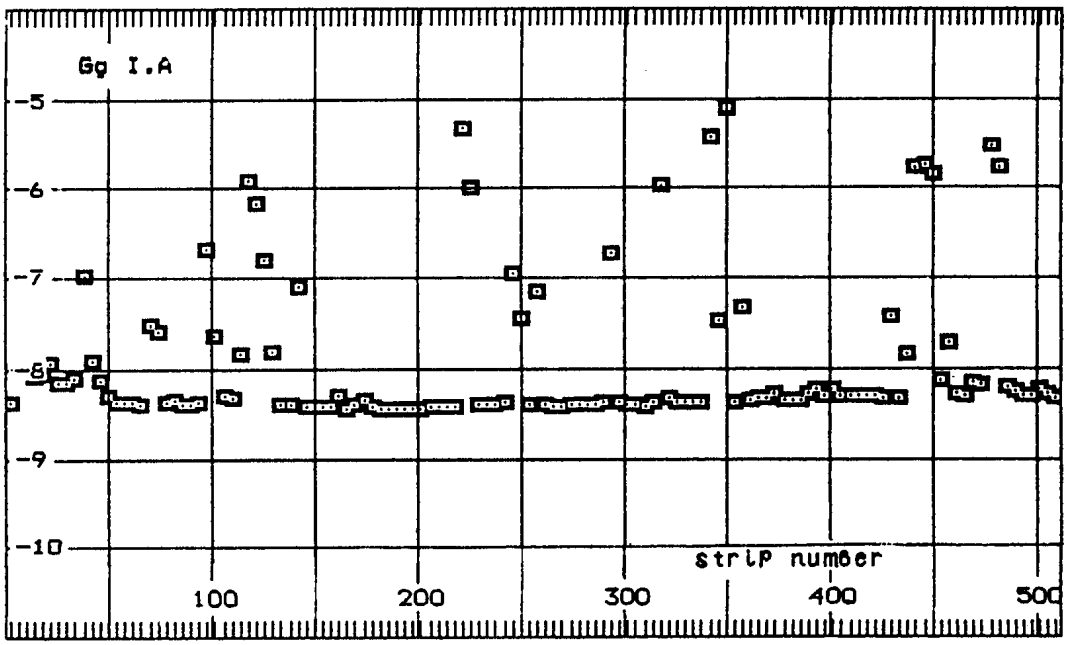

Fig.1. Curent leakage of 512 strips with reverse bias voltage $V = 100$ V

1. Instrument for measuring direct current with diapason [10^{-1} – 10^{-11}], A.
2. Controllable voltage source with minimum step 1 V and with diapason of voltage [1—300], V.
3. Automatic, programmable biaxial table with step 5—200 μm and scanning zone 40×40 mm^2.
4. Controllable contact.
5. Lighting.
6. Microscope.
7. PC (DVK-3).
8. "CAMAC".

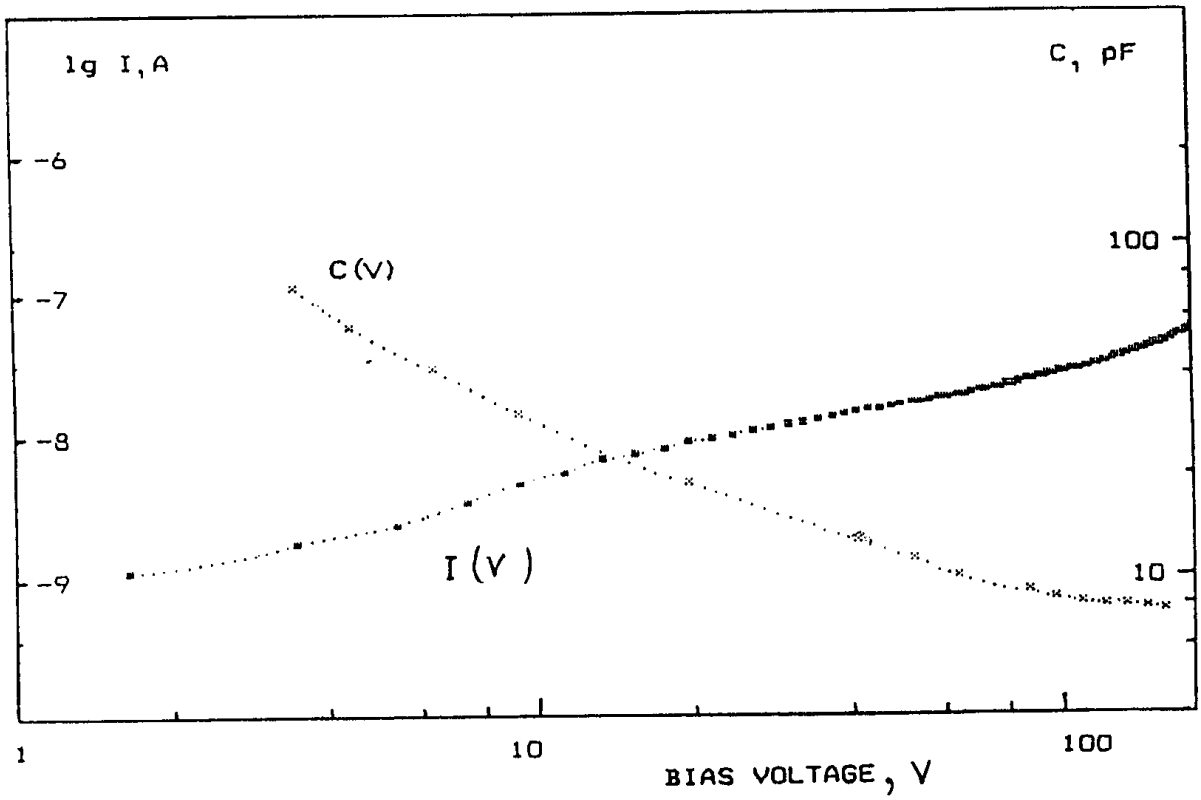

Fig.2. I—V and C—V characteristics of Si-detector with area $S = 45\ mm^2$