

Sample: EXL-ESR-Wechselwirkungskammer Kammer,
Fa. VATEC

Customer: P. Egelhof

Test Date: October 2008

Tested by H. Kollmus

- Performed tests
- Residual gas analysis
 - Bake-out cycle

- Equipment:
- Varian scroll pump SH110
 - TMP Varian Navigator TV-301
 - Pfeiffer RGA QMG200 (Prisma)
 - Pfeiffer Wide Range Gauge PBR 260 with controller TPG 261

Procedure

The chamber was baked to 230-250° C. The bake out temperature was limited by the heating power of the bake-out jackets and insufficient isolation. A comparably long heating cycle of one week was necessary to get rid of most hydrocarbon contaminations, but still visible after bake out at room temperature, compare Fig. 4. A base pressure lower 5e-10 mbar was reached. A untypical high hydrogen outgasing was observed, which could be caused by insufficient or only partially vacuum annealing.

Conclusion

The initial mass spectrum of the chamber as received showed a high contamination with oil and hydrocarbons due to insufficient cleaning. Nevertheless, after one week bake out a base pressure in the lower e-10 mbar region could be reached. A lower base pressure can not be reached with the equipment used.

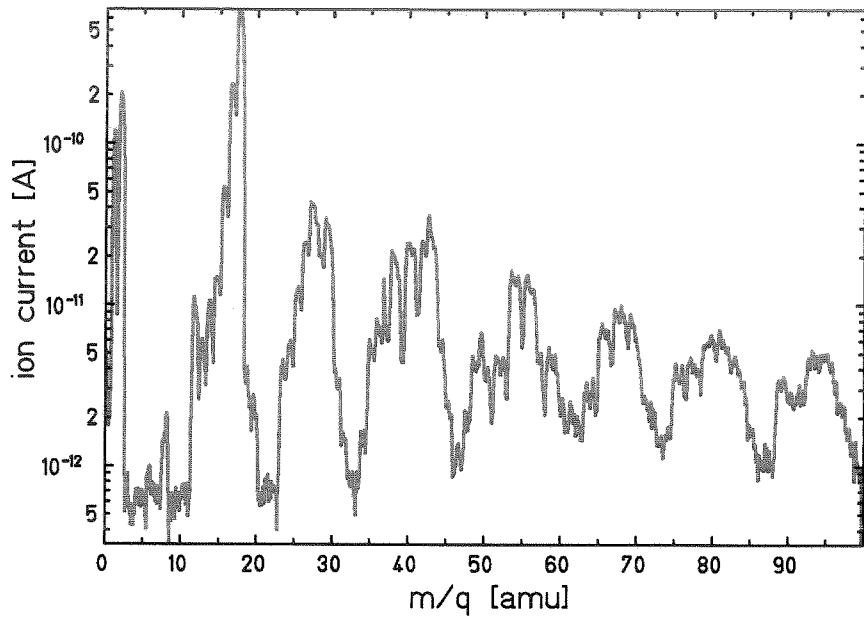


Fig. 1: Mass spectrum as received after one week of pumping

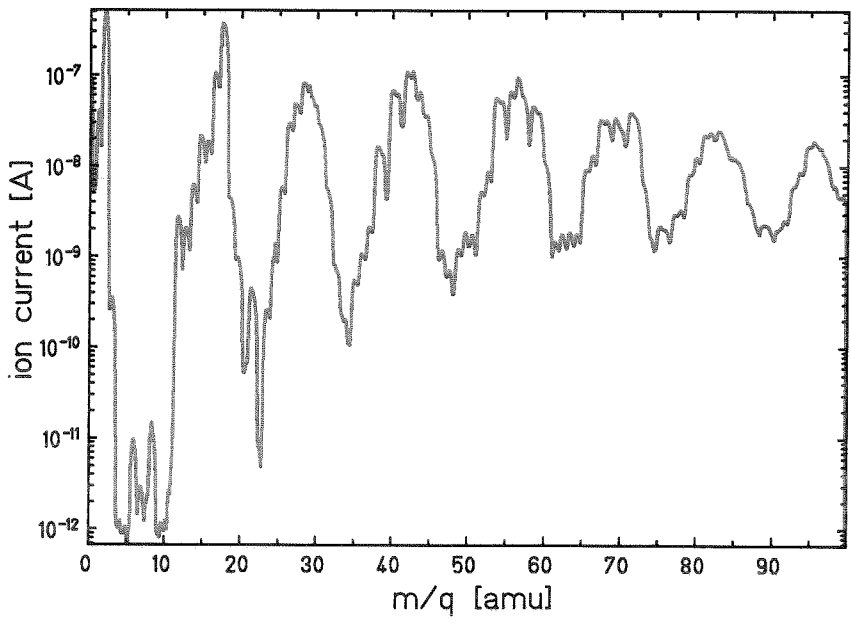


Illustration 1: Fig. 2: Mass spectrum during bake out at 150° C.

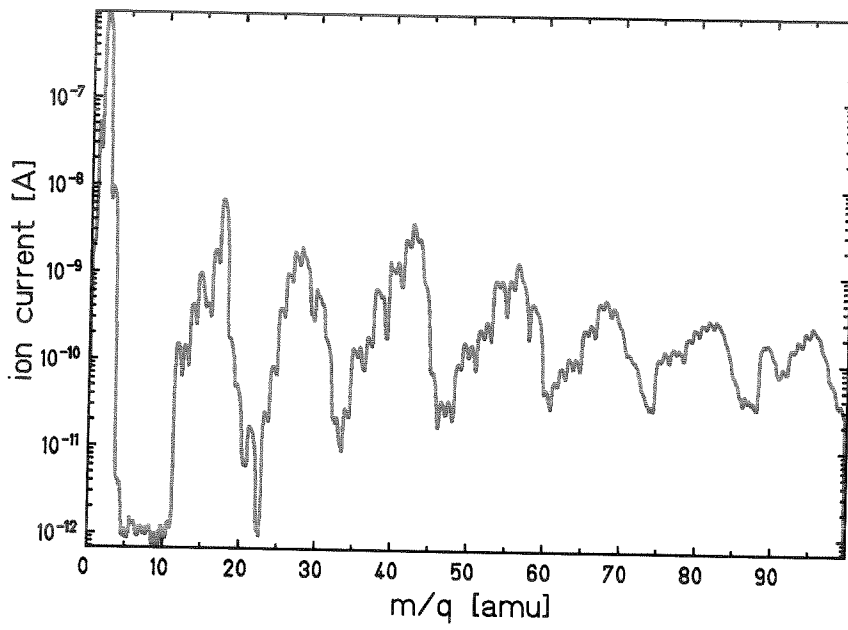


Illustration 2: Fig. 3: Mass spectrum during bake out at 230° C.

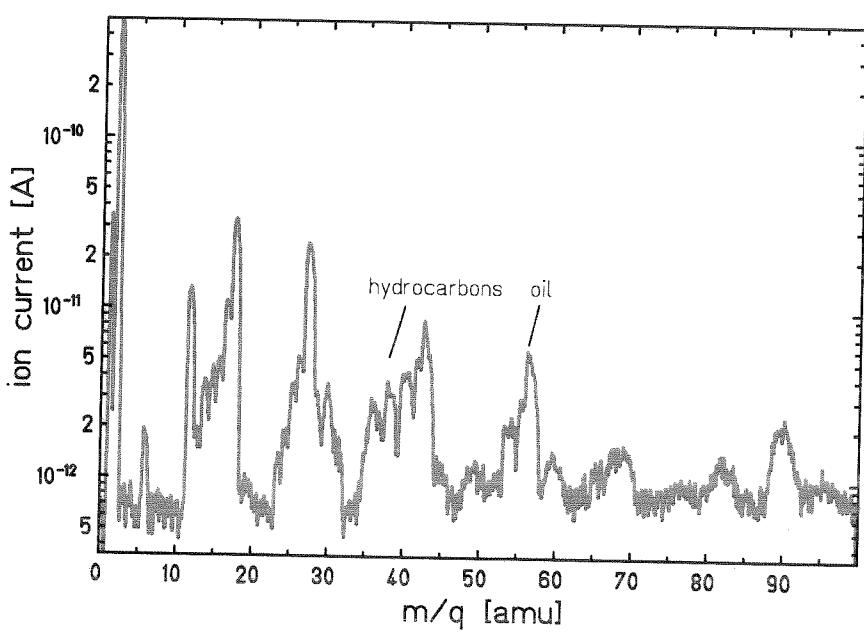


Illustration 3: Fig. 4: Mass spectrum after bake out.