ROTATIONAL SPECTRA OF FLUROTRIACETYLENE AND FLUOROTETRAACETYLENE PRODUCED BY ELECTRICAL DISCHARGE.

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In recent years the rotational spectra of many molecules produced by an electric discharge have been investigated by molecular beam Fourier transform microwave spectroscopy (MB-FTMW). After the initial experiments of Grabow *et al*[a] this field was subsequently developed by several groups with great success: Gerry *et al*.,[b] Endo *et al*,[c] Thaddeus *et al*.[d] In this context the MB-FTMW spectrometer in Valladolid has been equipped with a discharge system. Using different precursors gases (1,1-difluoroethylene, trifluoroacetylene, acetylene, ...) the hitherto unknown linear molecules of fluorotriacetylene and fluorotetracetylene have been produced and analyzed in the frequency range 6-18 GHz.

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[b] C. Styger and M. C. L. Gerry, *Chem. Phys. Lett.*, **188**, 213-216, (1992).
[c] Y. Endo, H. Konguchi and Y. Oshima, *Faraday Discuss.*, **97**, 341-350 (1994).
[d] M. C. McCarthy, M. J. Travers, A. Kovacs, W. Chen, S. Novick, C. A. Gottlieb, P. Thaddeus., *Science*, **275**, 518-520 (1997).