Why did I call my company XeF6 Ltd? Well, as a young researcher I became fascinated by xenon hexafluoride, XeF_6, and I spent several years keeping company with this enigmatic, surprising, and ultimately very rewarding molecule. I hope that ny clients' experience working with my company is as good as mine working with the compound.

XeF_6 is a compound of a noble gas, but when I first encountered chemistry at school, the noble gases (or "inert gases" as we then called them) weren't supposed to form compounds. Their lack of chemistry was one of the cornerstones of the Periodic Table, and at 12 years of age I had been very impressed by my first sight of the Periodic Table, its ability to structure so much diverse information, the audacity of the scope and vision. Small wonder I ended up as an inorganic chemist.

So the news of Neil Bartlett's 1962 experiments, demonstrating that xenon could be made to react, hit me with all the contemporary force of the music of the Beatles and the Stones, the photography of David Bailey, the fashion of Mary Quant. Here was liberation from the tramlines of the orthodox thinking of the past. Xenon chemistry was new, and, as they said 10 years ago about any exciting new topic, very very sexy. Definitely the new black.

My Part II and D.Phil research projects in Oxford baited the hook. The B-group elements of the Periodic Table, pictured on the right of the transition metals, typically exhibited an extensive chemistry in oxidation states two less than the group number. In this oxidation state their atoms had "spare" pairs of electrons, which sometimes had great effects on the shape of the molecules. Mapping the stereochemical impact of these "lone pairs" as they became known, was a hot topic, and what better way of addressing it than to use the latest technique of laser Raman spectroscopy, using He-Ne lasers that cost about £1000 for every milliwatt of red light? Sold.

All the systems were pretty well behaved except those where the central B-group element, such as selenium, tellurium, antimony, arsenic or xenon, was bonded to 6 other atoms. If the attached atoms were large, the entities appeared to be octahedral in shape but to have unusual spectroscopic properties (thanks to the second-order Jahn-Teller distortion). Fluorides were different, and seemed to solve the problem of the potential stereochemical activity of the lone pair in ways that depended strongly on the environment of the molecule. Only xenon hexafluoride, a gas around room temperature, could be studied free of intermolecular interactions - where else could the truth be found?

And the centre of xenon chemistry, Neil Bartlett's lab, was at the University of California at Berkeley: a centre of radical thinking, of alternative societies, of antiwar activity, and still resonating to the music of the time. In 1971 it seemed a pretty good bet.