

NOVEL METHODS AND TECHNIQUES INVOLVING FLUORINE AND VOLATILE FLUORIDES

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Due to its high reactivity, fluorine is particularly useful in the area of material analysis and surface treatment.

The elemental analysis systems IMA ("Inorganic Material Analyzer", an automatic fluorine combustion device, allowing the quantitative determination of 24 elements) and DESA ("Decomposition and Separation Apparatus" for sample preparation) are presented.

Treatment with fluorine can achieve effects similar to those of plasma processes, e.g. dry etching in PE-CVD (Plasma Enhanced Chemical Vapour Deposition) equipment, and improvement of surface properties of plastics and elastomers for adhesives, coatings and printing.

Safe and simple handling of fluorine as well as safe disposal of waste gas are crucial points for the introduction of these processes to the market. Therefore great effort has been invested into the development of reliable vacuum systems, highly active sorption materials and catalytic treatment of waste gases (CATHYL® and CATHYL®-OX).