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Airborne Molecular Contamination in Clean Room Environment

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Abstract : In clean room environment molecular contamination in very small concentrations can cause significant harm for the components and processes. This is commonly referred as airborne molecular contamination (AMC). There is a shortage of high sensitivity continuous measurement data for existence and behavior of several of these contaminants. Accordingly, in most cases correlation between concentration of harmful molecules and their effect on processes is not known. In addition, the formation and distribution of contaminating molecules are unclear. In this work sensitive optical techniques are applied in clean room facilities for investigation of concentrations, forming mechanisms and effects of contaminating molecules. Special emphasis is on reactive acid and base gases ammonia (NH3) and hydrogen fluoride (HF). They are the key chemicals in several operations taking place in clean room processes.

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