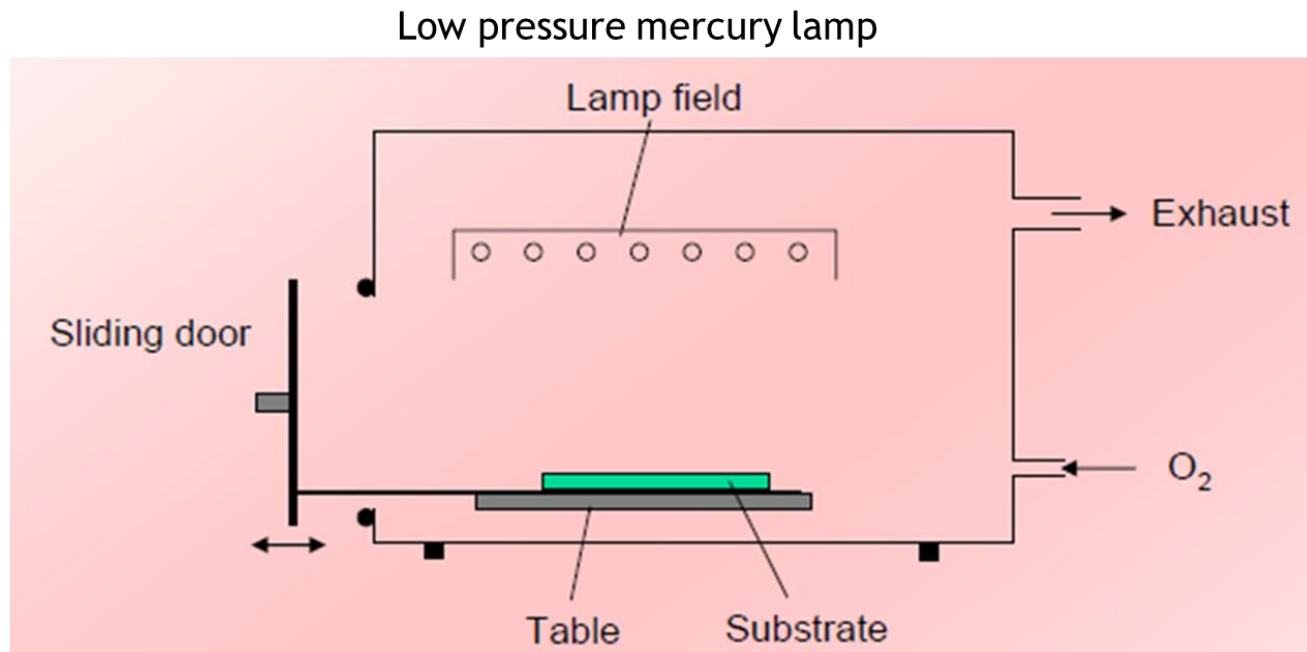


# How to UV Ozone Cleaning

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# UV/Ozone cleaner

The UV-ozone-cleaning procedure is a highly effective method to remove a variety of contaminants from surfaces. It is a simple-to use dry process which is inexpensive to set up and operate. It can produce clean surfaces at room temperature, either in a room atmosphere or in a controlled atmosphere.

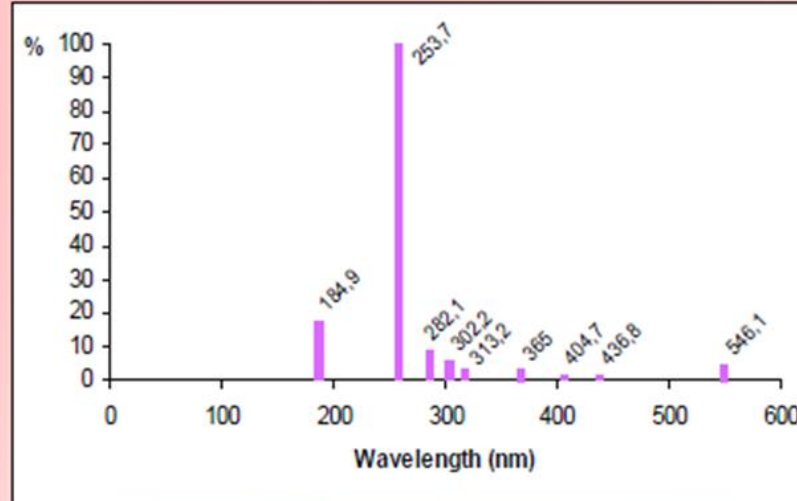


# The Mechanism of UV/Ozone cleaning

- ▶ The low-pressure mercury discharge tubes generate two wavelengths of interest, 184.9 and 253.7 nm.

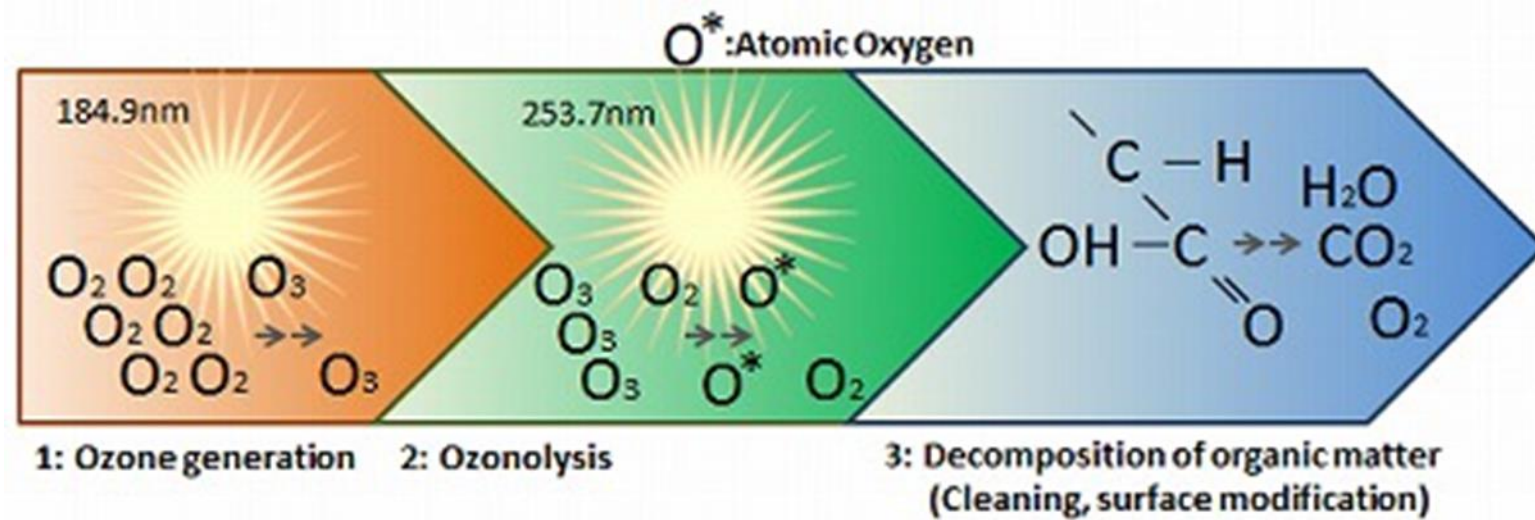


Grid lamp field

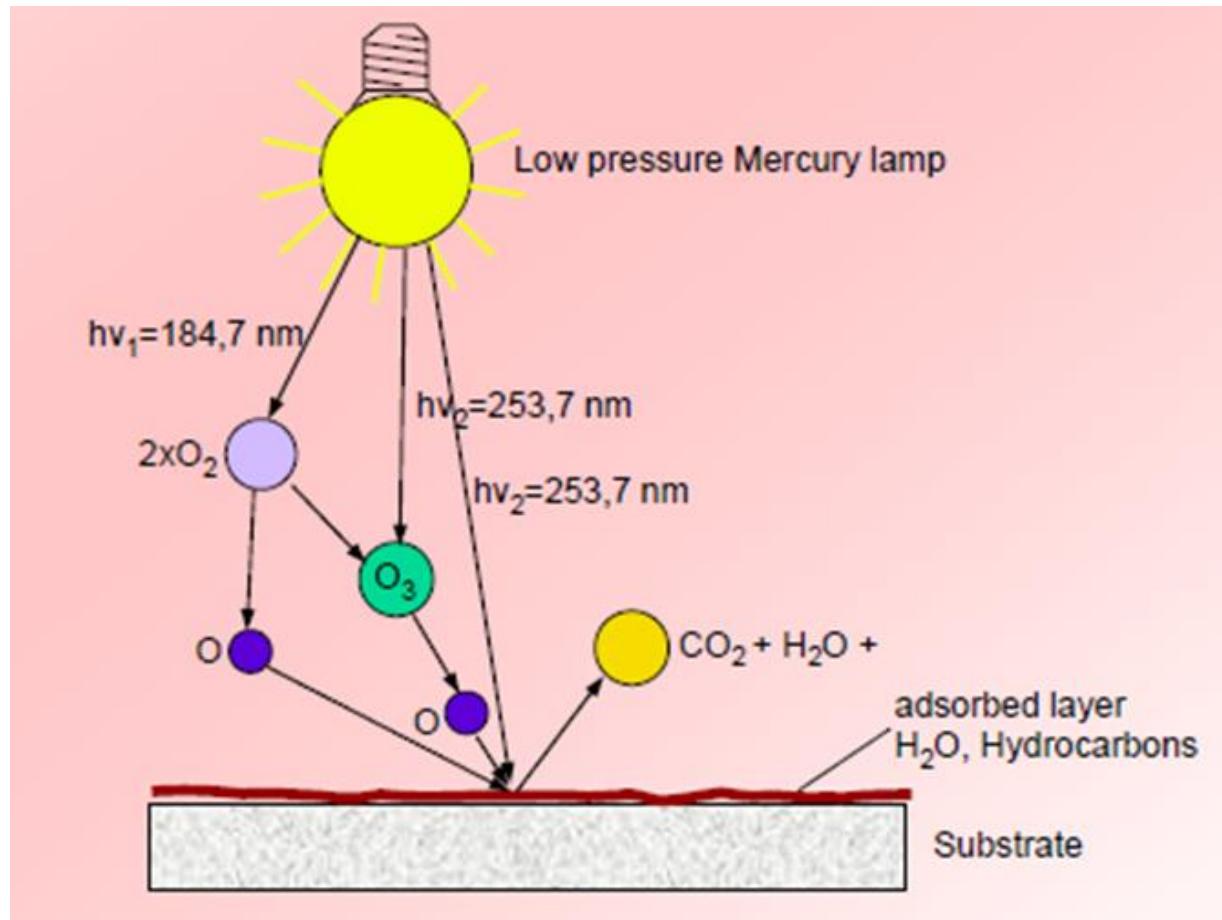


Optical spectrum of low pressure Mercury lamp

- ▶ The 184.9nm UV line decomposes oxygen molecules and synthesizes ozone O<sub>3</sub>.
- ▶ The 253.7nm UV line decomposes ozone and produces high energy O\* (activated oxygen).



# The Mechanism of UV/Ozone cleaning



- ▶ Contaminants: photo resists, resins, human skin oils, cleaning solvent residues, silicone oils
- ▶ Precleaning: first, to remove contaminants such as dust and salts which can not be changed to volatile products by the oxidizing action of UV/ozone; second, to remove thick films the bulk of which could be transformed into a UV resistant film by the crosslinking action of the UV light.
- ▶ Substrates: glass, quartz, mica, metals, ceramics, semiconductors
- ▶ Effects other than cleaning: oxidation, bleaching, and etching