

# Argon Plasma Simulations for Educational Purposes at Fontys University of Applied Physics

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## Abstract

At the Fontys University of Applied Physics (The Netherlands) a plasma etcher has been acquired for educational purposes. The machine operates at low power up to 30 Watt and is driven with a magnetic coil at 13.56 MHz. The use of COMSOL Multiphysics software will be discussed to simulate the temperature and mass fractions of the activated and ionized atoms in the gas. The simulations will be checked with measurements in the plasma such as the gas temperature and some spectral properties. The main gas used in this study is Argon, but to generate meaningful tests for the industry air will be used. In this way the etcher is able to clean or activate surfaces. Some applications in our institute will be presented.

## Figures used in the abstract

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**Figure 1:** Plasma Etcher

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**Figure 2:** Temperature Profile in the plasma etcher.

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**Figure 3**

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**Figure 4**