



אוניברסיטת בן-גוריון בנגב
Ben-Gurion University
of the Negev

Nano-Fabrication
Center

ICP-CVD

Description

Plasma-Enhanced Chemical Vapor Deposition (ICP-CVD) is a thin film deposition technology. ICP-CVD is used to deposit highly uniform thin films (up to few microns), over large areas at relatively low temperature (less than 350°C), and at a high deposition rate. High quality optical materials, such as Si₃N₄ waveguides can be deposited by ICP-CVD. Other materials typically deposited by PECVD include SiO₂, Si₃N₄ and SiON, Si, DLC and SiC, which can be deposited at temperatures between 100°C and 400°C. The low temperature deposition facilitates control over properties such as refractive index, hardness, stress, electrical properties, and others.

Due to the excellent materials quality obtainable, lessening residual stress in the films, and ease of films deposition up to a few microns thick.

The ICP-CVD at BGU is **unique** in its ability to deposit stress-free high quality and high purity optical materials, especially materials used in making waveguides for quantum communication.

Specifications/Capabilities

Wafer size: up to 8".

High optical quality thin films: SiO₂, Si₃N₄ and SiON, Si, DLC and SiC.

Tunable filter and modulator for quantum devices

Deposit films conformally (covering sidewalls)

Deposit onto wafers containing metal layers or other temperature-sensitive structures such as quantum dots silicone nanostructures.

Yields some of the fastest deposition rates while maintaining film quality (such as roughness, defects/voids).

Link

<https://plasma.oxinst.com/technology/icpcvd>