

Genco Active Anodes form an essential accessory for achieving greater control of plasma processes involving rotatable magnetrons.

KEY FEATURES

1. Avoids anode and film quality drift in DC and AC processes
2. Reduces heat on the substrate
3. Reduces film stress and increases hardness
4. Activates reactive gas species for higher rates
5. Combines with an oxygen plasma and carbon targets for plasma pre-treatment

ACTIVE ANODE

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APPLICATIONS

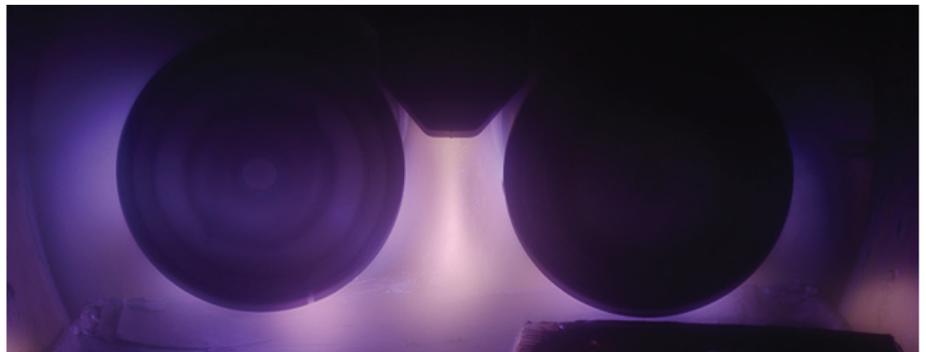
- Low temperature plastic web and parts coating
- Longer ITO coating campaigns
- Higher quality optical layer stacks
- Scratch resistant DLC on glass and plastic
- High rate plasma pre-treatment



Gencoa's active anode provides an effective method for collecting electrons escaping rotatable magnetron plasma (low impedance plasma patent 9028660, filed August 14, 2008).

The magnetic field from a single or double magnetron is combined with the magnetic field of the anode, forming a closed trap. The electrons are guided to the anode as they do not possess sufficient energy to pass the field lines and escape the trap.

For DC type plasmas, the anode is electrically floating and connected to the positive of the power supply. For AC or switching bipolar power modes, the anode is electrically earthed.



The main function of the anode is to provide long term stability to the process, and prevent uniformity shifts with time. By driving the electrons away from the substrates, excess heating is avoided, resulting in higher deposition rates being achievable on temperature-sensitive substrates.

If the sputter target switches to a positive voltage, as the electrons are diverted to the anode, there is a strong positive ion bombardment of the film. This enhances hardness and density whilst reducing stress (positive and negative combined impacts).

This positive/negative plasma bombardment effect can be used as a plasma pre-treatment source. Carbon targets in the presence of oxygen will form CO₂, and no deposition will result whilst the substrates are bombarded. Without O₂ the process is the basis of the G-DLC transparent layers.

All anodes have high flow water cooling, removable shields and single or segmented zone gas delivery.

FURTHER INFORMATION

Contact: sales@gencoa.com or visit www.gencoa.com/active-anode

