Gencoa Active Anodes form an essential accessory for achieving greater control of plasma processes involving rotatable magnetrons - delivering benefits for low ion impact coatings such as ITO.

**KEY FEATURES**

1. Avoids anode drift in DC/DC-pulsed processes
2. Enhanced AC processes through better plasma confinement
3. Reduces heat on the substrate
4. Activates reactive gas species for enhanced ion bombardment energy
5. Enhanced O$_2$ plasma pre-treatment on high speed roll-to-roll applications
Gencoa’s active anode provides a consistent and effective path for electrons during rotatable magnetron cathode operation, ensuring process stability during long-term sputter coating processes.

The combination of the active anode with Gencoa GRS dual rotatable magnetron system produces a high energy plasma volume incident on the substrate surface, ideal for dense layer production, without excess substrate heating caused by electron bombardment.

As a result of the reduced electron bombardment on the substrate, higher magnetron cathode powers can be reached leading to higher deposition rates overall.

Gas injection ports, placed throughout the length of the active anode, allow enhanced ion energy bombardment and coating uniformity to be achieved – all achieved without the need for additional anode bias power supplies.

The combination of magnetic fields from single or double magnetron system with the active anode forms a closed trap for plasma confinement, guiding electrons toward the anode and away from substrates.

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

ACTIVE ANODE

Dual rotatable plasma process without and with active anode

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<table>
<thead>
<tr>
<th>CONFIGURATION</th>
<th>HARDNESS (GPa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC power, no active anode</td>
<td>11.6</td>
</tr>
<tr>
<td>AC power with active anode</td>
<td>13.1</td>
</tr>
<tr>
<td>DC-pulsed, no active anode</td>
<td>10.7</td>
</tr>
<tr>
<td>DC-pulsed with biased active anode</td>
<td>12.1</td>
</tr>
</tbody>
</table>

Aluminium oxide coating without and with anode gas injection

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