

# MAGPULS Applications

**A**APPLIED  
**O**OPTIVAC  
**T**TECHNOLOGY

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# Example A

## Surface Cleaning, Activation and Etching

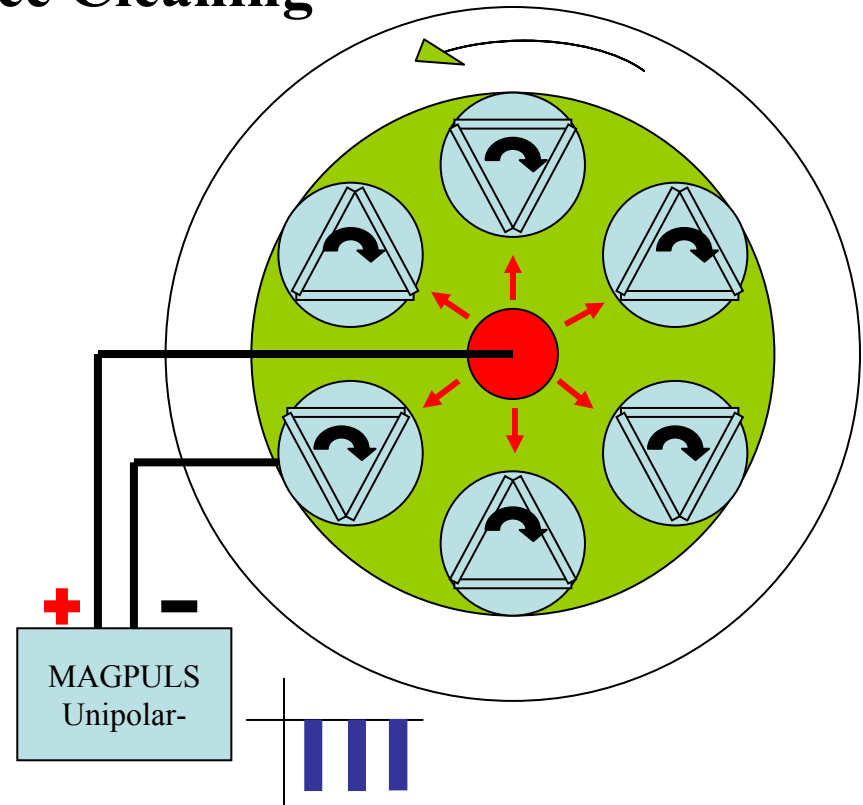
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### Parameters for Unipolar Surface Cleaning

- Mode: UP-
- 50~500 mtorr
- $T_{ON-}=20\mu s$ ,  $T_{OFF-}=10\mu s$
- $V_- = -350V \sim -700V$
- Ar, O<sub>2</sub>, CF<sub>4</sub>

### Substrate Materials:

- Glass
- Metal
- Polymer



# Example B

## Surface Cleaning and Sputtering

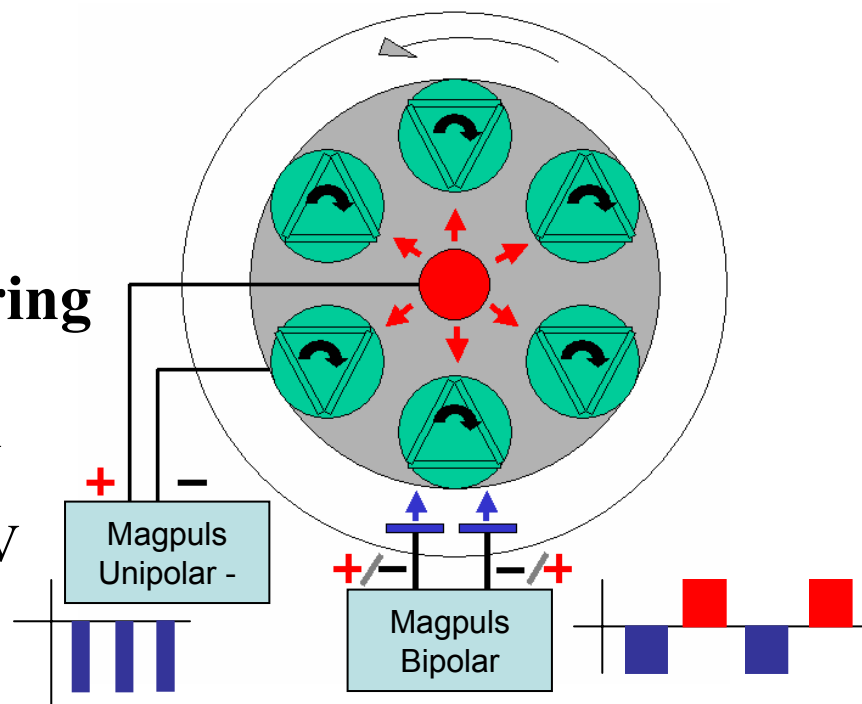
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### Parameters for Unipolar Surface Cleaning

- Mode: UP-
- $T_{ON-}=20\mu s$ ,  $T_{OFF-}=10\mu s$
- Ar, O<sub>2</sub>

### Parameters for Bipolar Sputtering

- Mode: Symmetric Bipolar
- $T_{ON-}=20\mu s$ ,  $T_{OFF-}=10\mu s$ ,  $V_- = -500V$
- $T_{ON+}=20\mu s$ ,  $T_{OFF+}=10\mu s$ ,  $V_+ = +500V$



# Example C

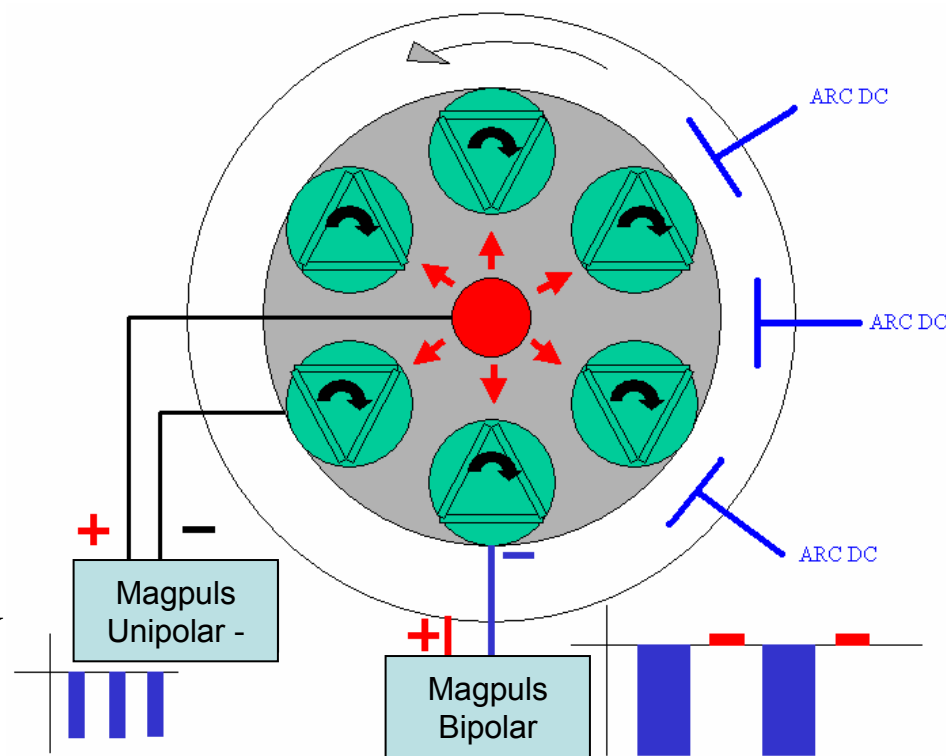
## PVD Arc Bias

### Unipolar Bias

- Mode: UP-
- $T_{ON-}=30\mu s$ ,  $T_{OFF-}=10\mu s$ ,  $V_-=-600V$

### Asymmetric Bipolar Bias

- Mode: Asymmetric Bipolar
- $T_{ON-}=30\mu s$ ,  $T_{OFF-}=10\mu s$ ,  $V_-=-600V$
- $T_{ON+}=10\mu s$ ,  $T_{OFF+}=10\mu s$ ,  $V_+=+75V$

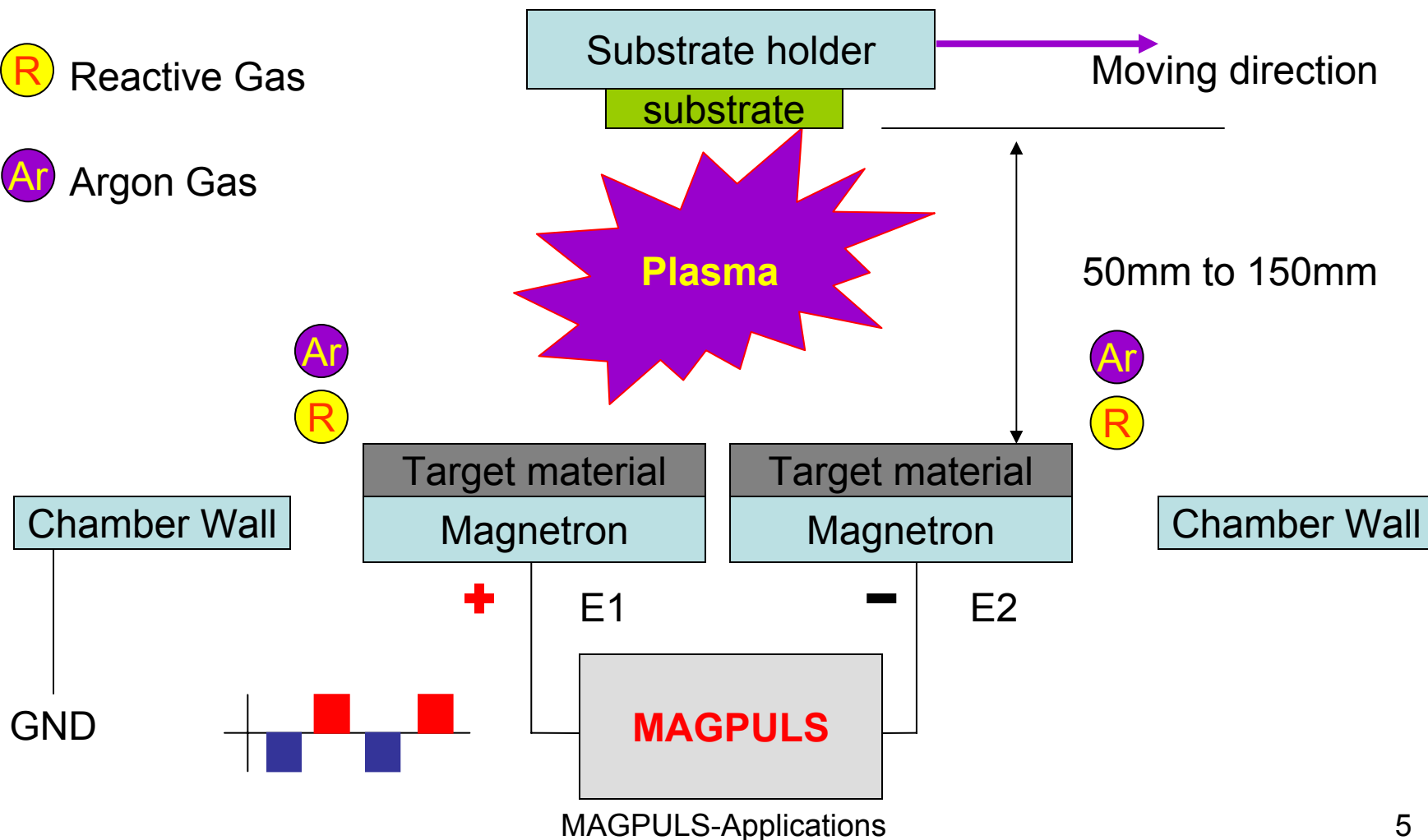


# Example D

## Dual Magnetron Reactive Sputtering

**R** Reactive Gas

**Ar** Argon Gas



# Example E

## Single Magnetron Reactive Sputtering

