

— CASE EXAMPLE —

Facing Target Sputtering

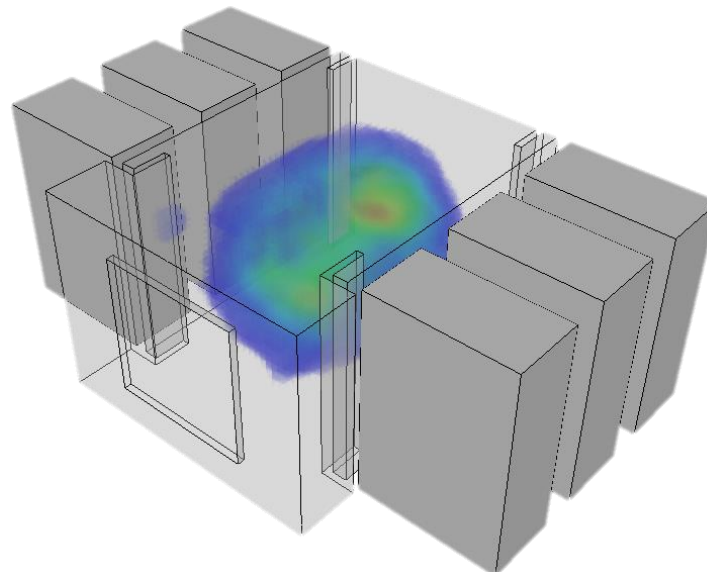
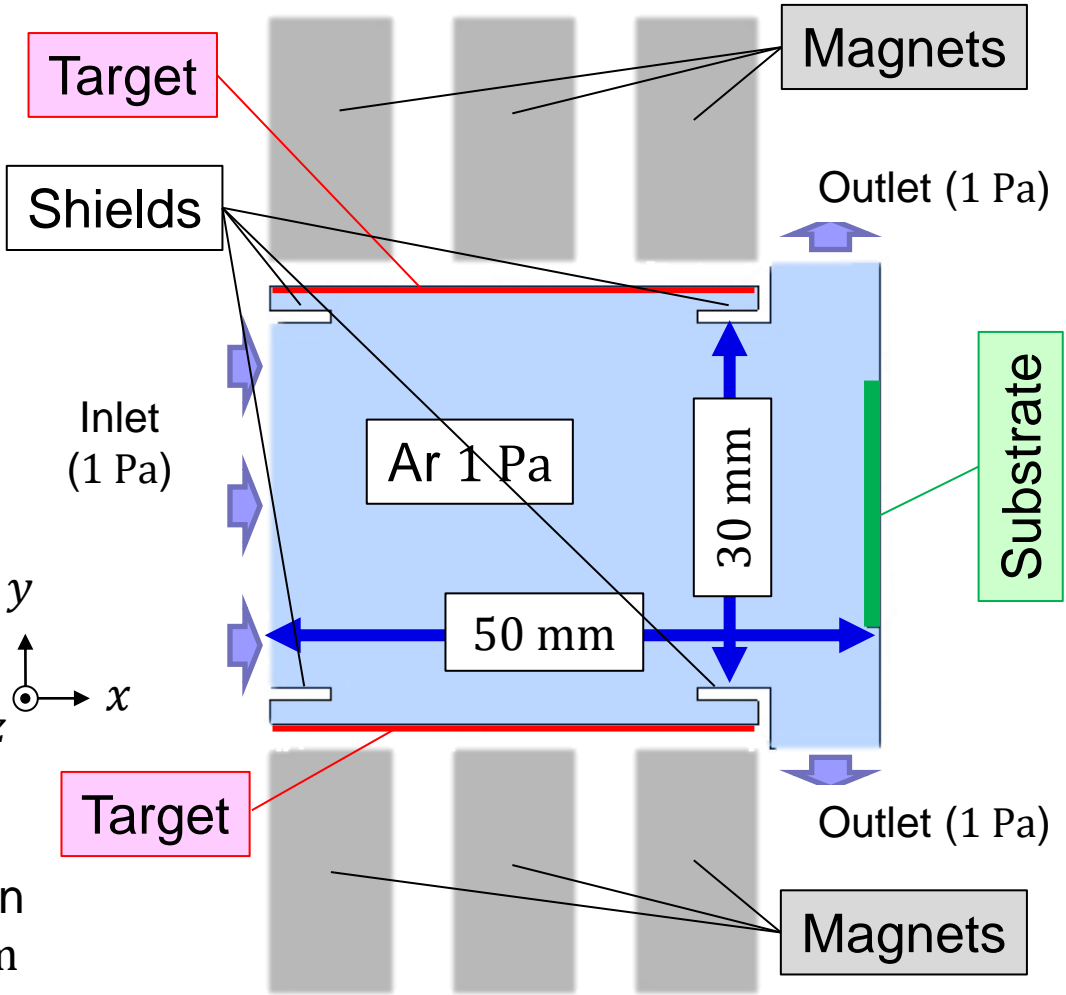
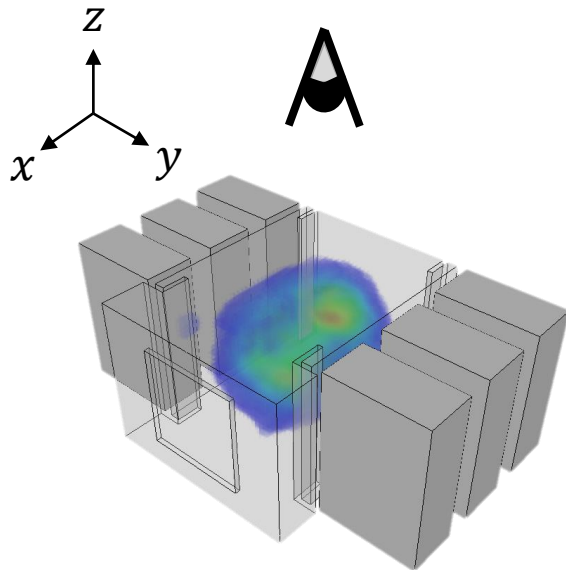


FIG. Excited Gas Distribution (~Light Emitting Part)

Al Coating by Facing Target Sputtering

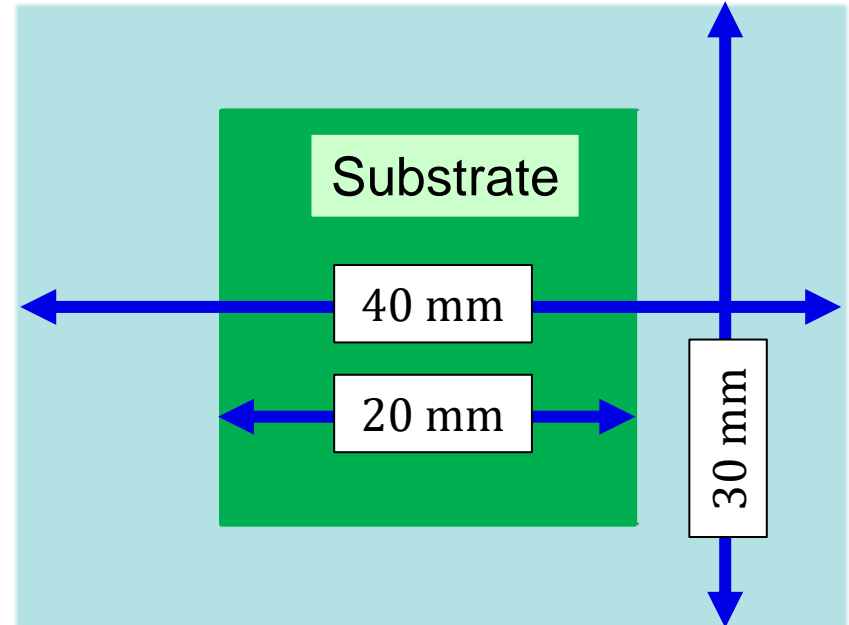
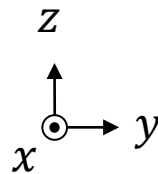
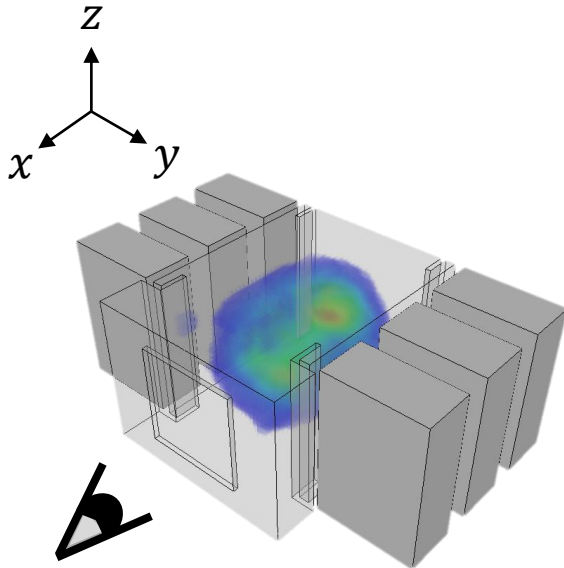
3D Model



[Magnets Setup (Common)]
Size: $10 \times 20 \times 30 \text{ mm}^3$
Magnetization: 0.35 T
Direction: positive y-direction
Distance from Shields: 5 mm

Al Coating by Facing Target Sputtering

3D Model



Note: omit magnets

[Target]

Material: Al

Voltage: DC -450 V

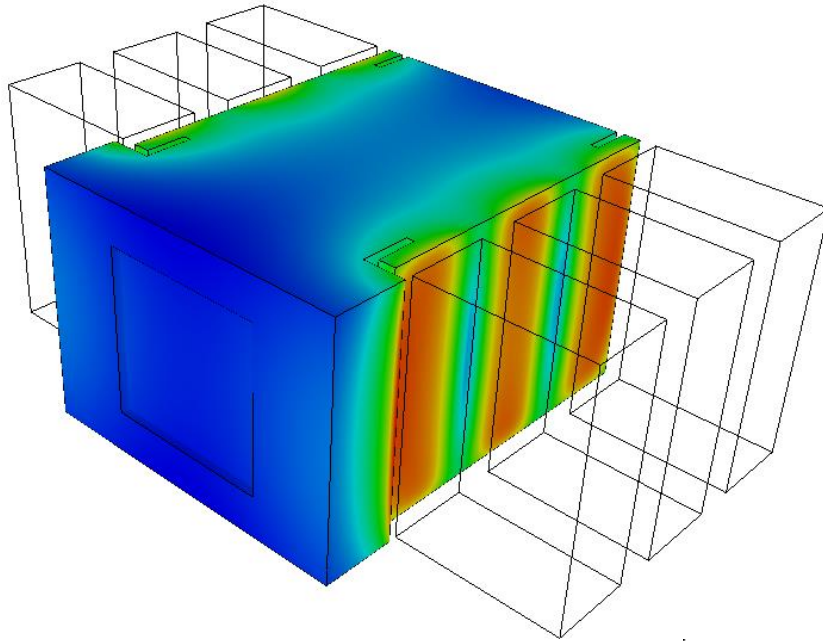
[Substrate]

Voltage: RF -40 V

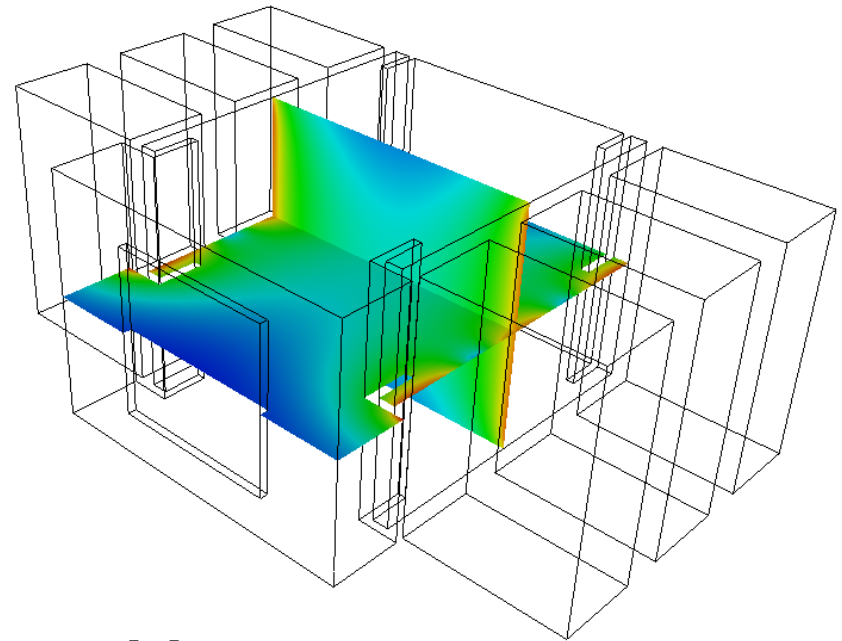
Frequency: 13.56 MHz

Other walls are earthed.

Surface



Cross Section

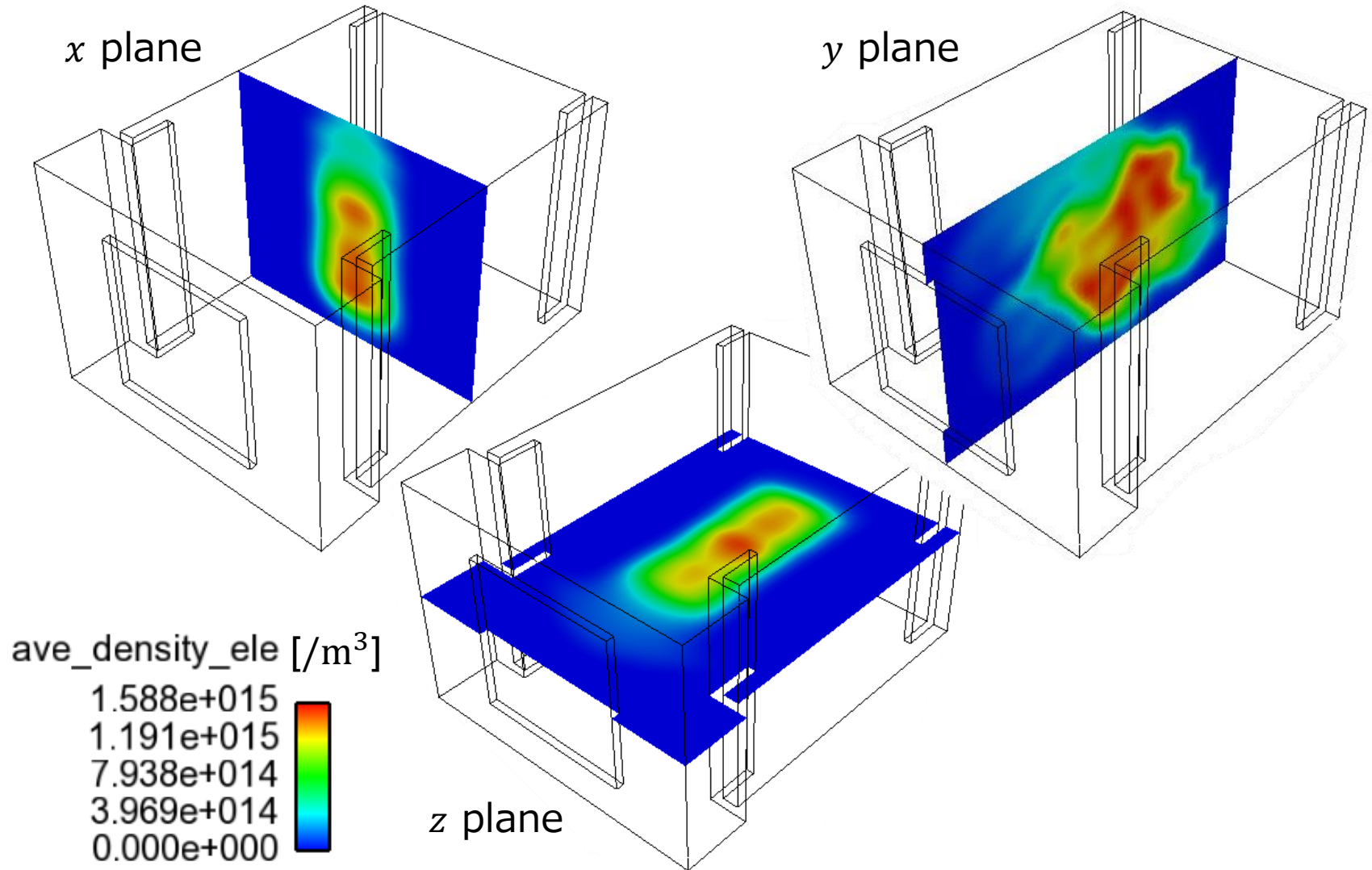


magnetic_field [T]

1.341e-001
1.025e-001
7.083e-002
3.917e-002
7.508e-003

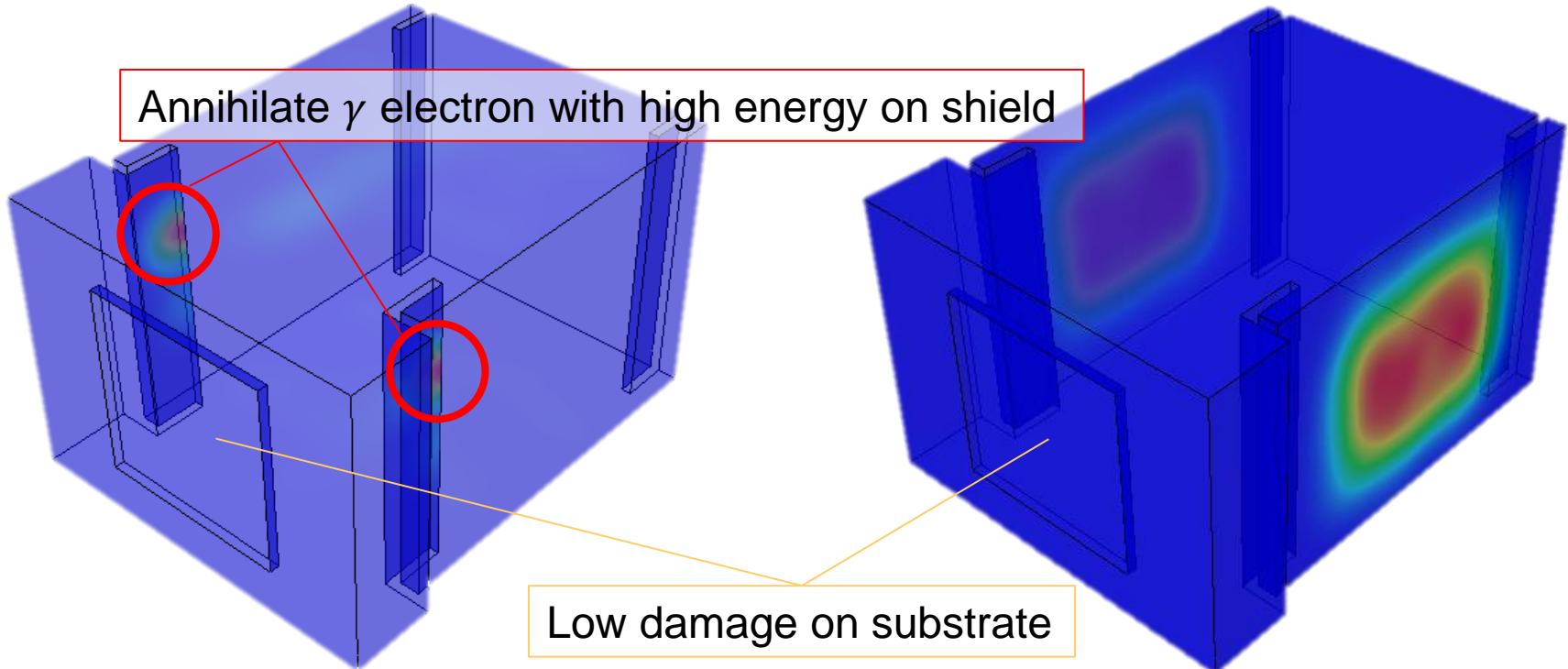


Electron Density

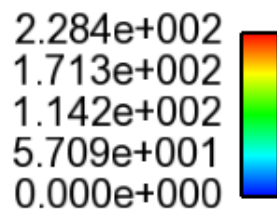


Electron Energy Flux

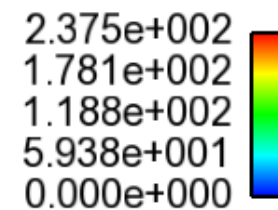
Ion Energy Flux



ave_flux_energy_ele [W/m²]



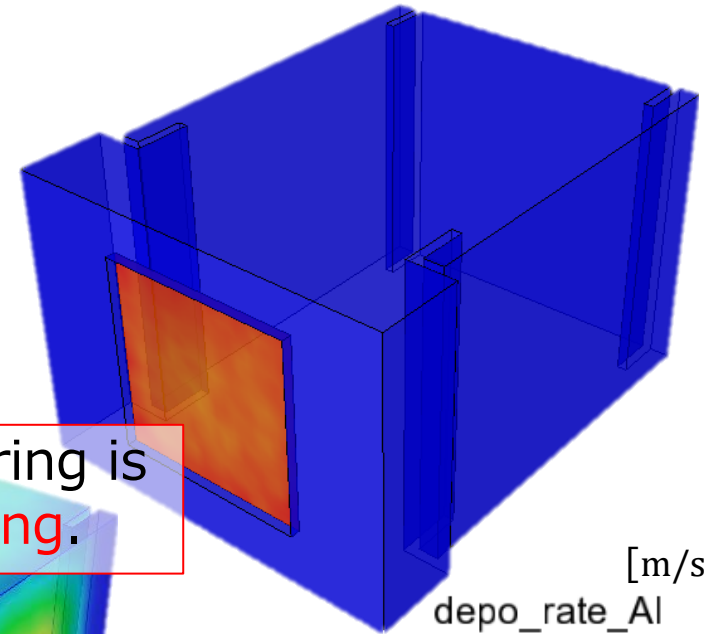
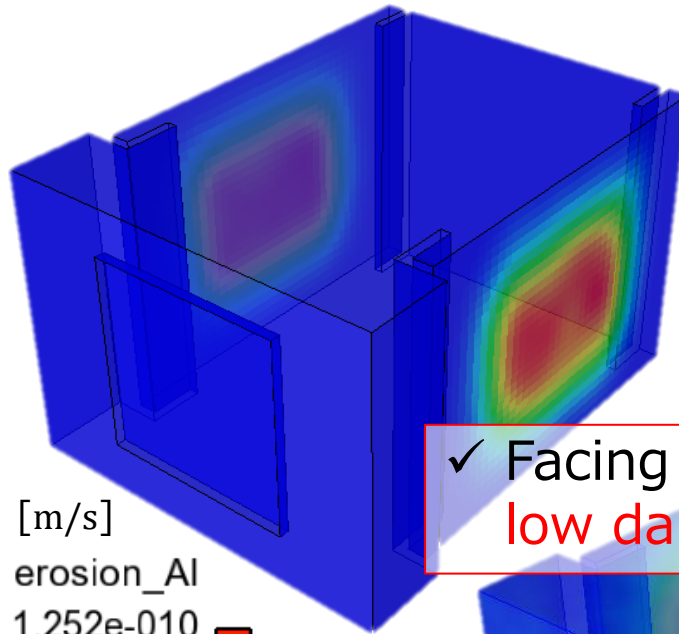
ave_flux_energy_Ar_p [W/m²]



Sputtering and Deposition

Al Sputtering Rate

Al Deposition Rate

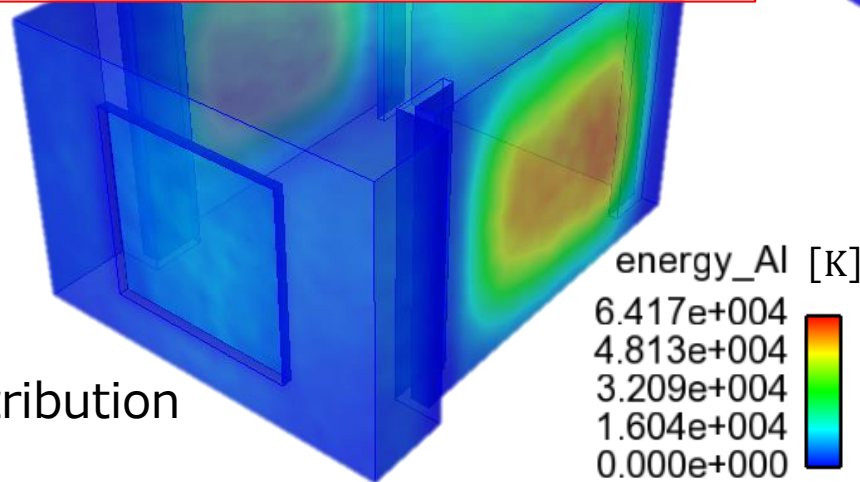


✓ Facing target sputtering is low damage sputtering.

[m/s]
erosion_Al
1.252e-010
9.390e-011
6.260e-011
3.130e-011
0.000e+000

[m/s]
depo_rate_Al
9.076e-011
6.807e-011
4.538e-011
2.269e-011
0.000e+000

Al Energy Distribution on surface



energy_Al [K]
6.417e+004
4.813e+004
3.209e+004
1.604e+004
0.000e+000