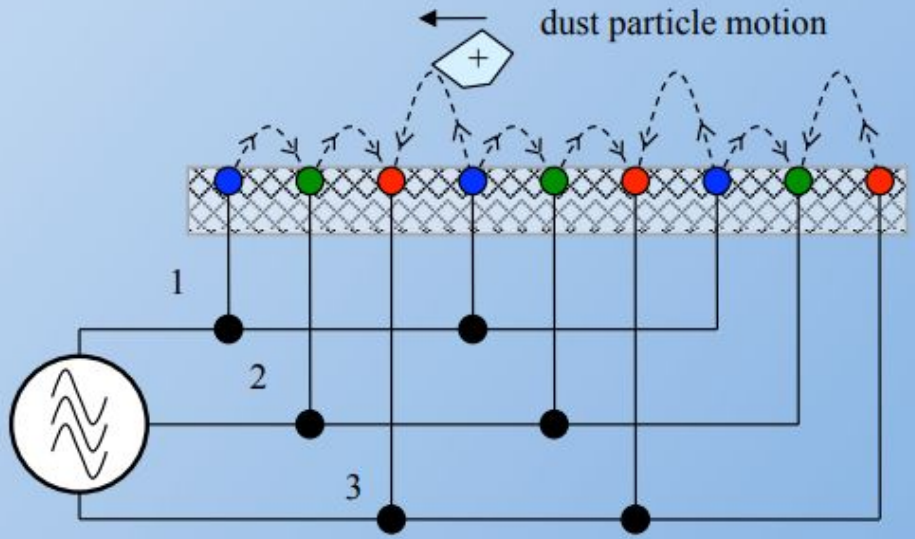
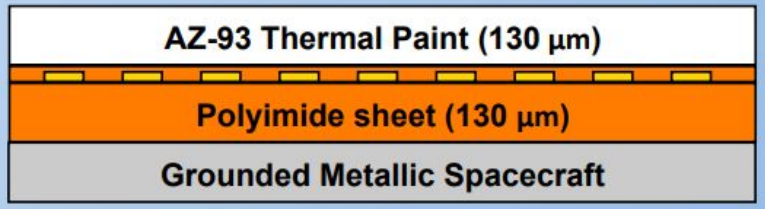
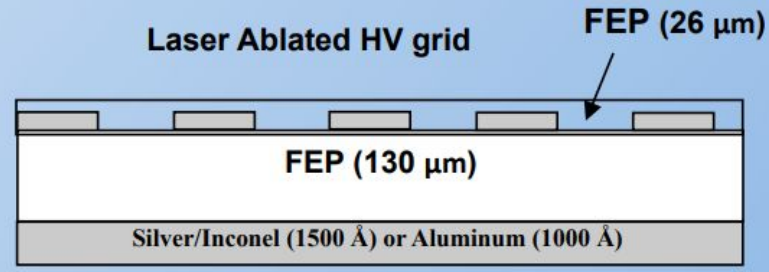
EDS



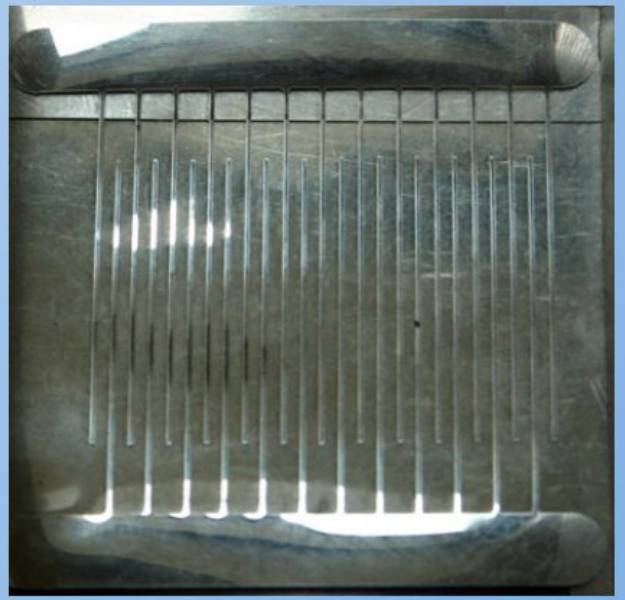
Three-phase electrode pattern with **phase 1** electrodes at V_1=-V, **phase 2** electrodes at V_2=+V, and **phase 3** electrodes at V_3= +V. Charged particles will move in a particular direction.



Schematic of the cross-section of a surface with the Electrodynamic Dust Shield embedded into a substrate coated with AZ-93 thermal paint.



Schematic of the Electrodynamic Dust Shield FEP Thermal Radiators



Dielectrophoresis (**DEP**) is a phenomenon in which a force is exerted on a dielectric particle when it is subjected to a non-uniform electric field.[1][2][3][4][5][6] This force does not require the particle to be charged.

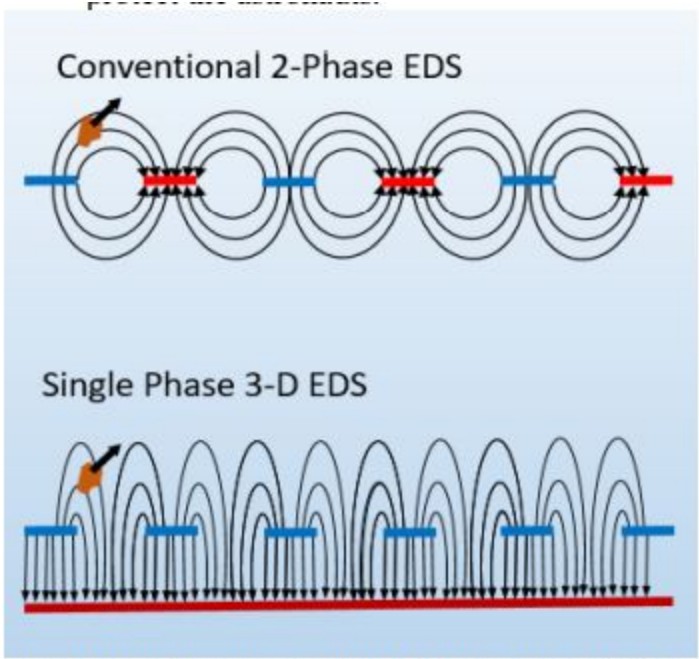
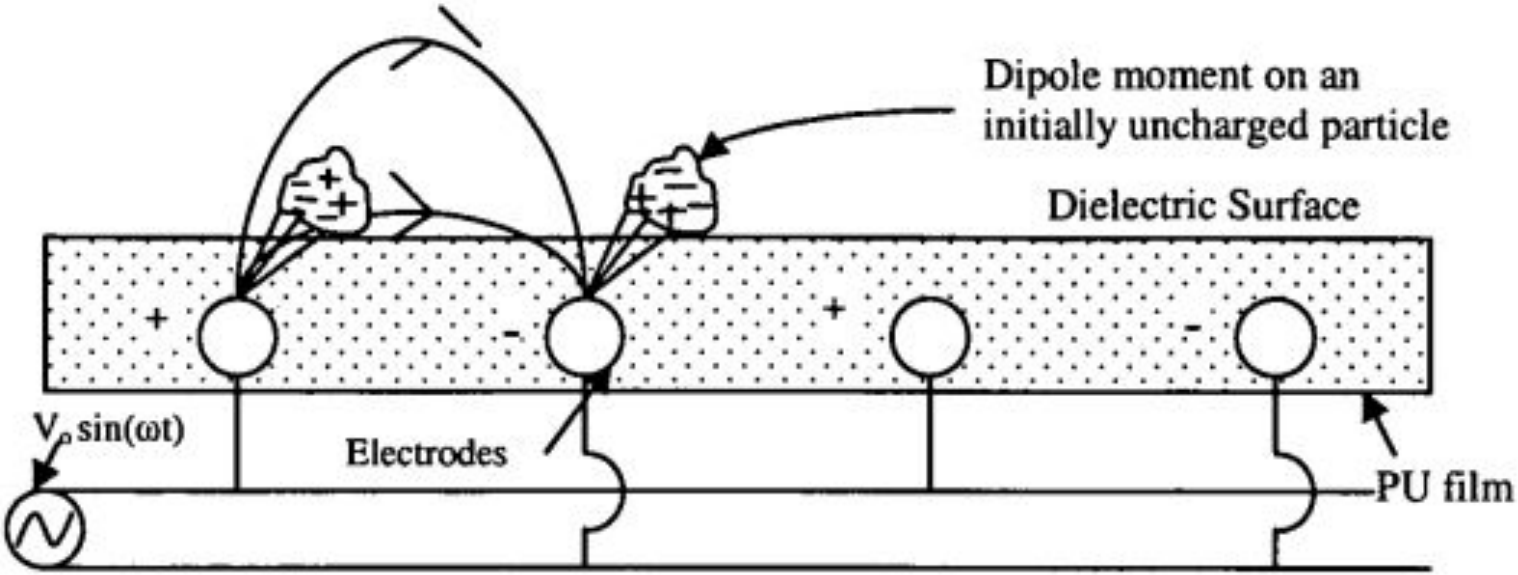


Figure 1. (top) The conventional 2-D EDS with electrodes on surface. (bottom) The 3-D version of the EDS with a ground plane beneath the electrode plane.


Dipole moment on an
initially uncharged particle
Dielectric Surface
+
-
+
-
$V_o \sin(\omega t)$
Electrodes
PU film

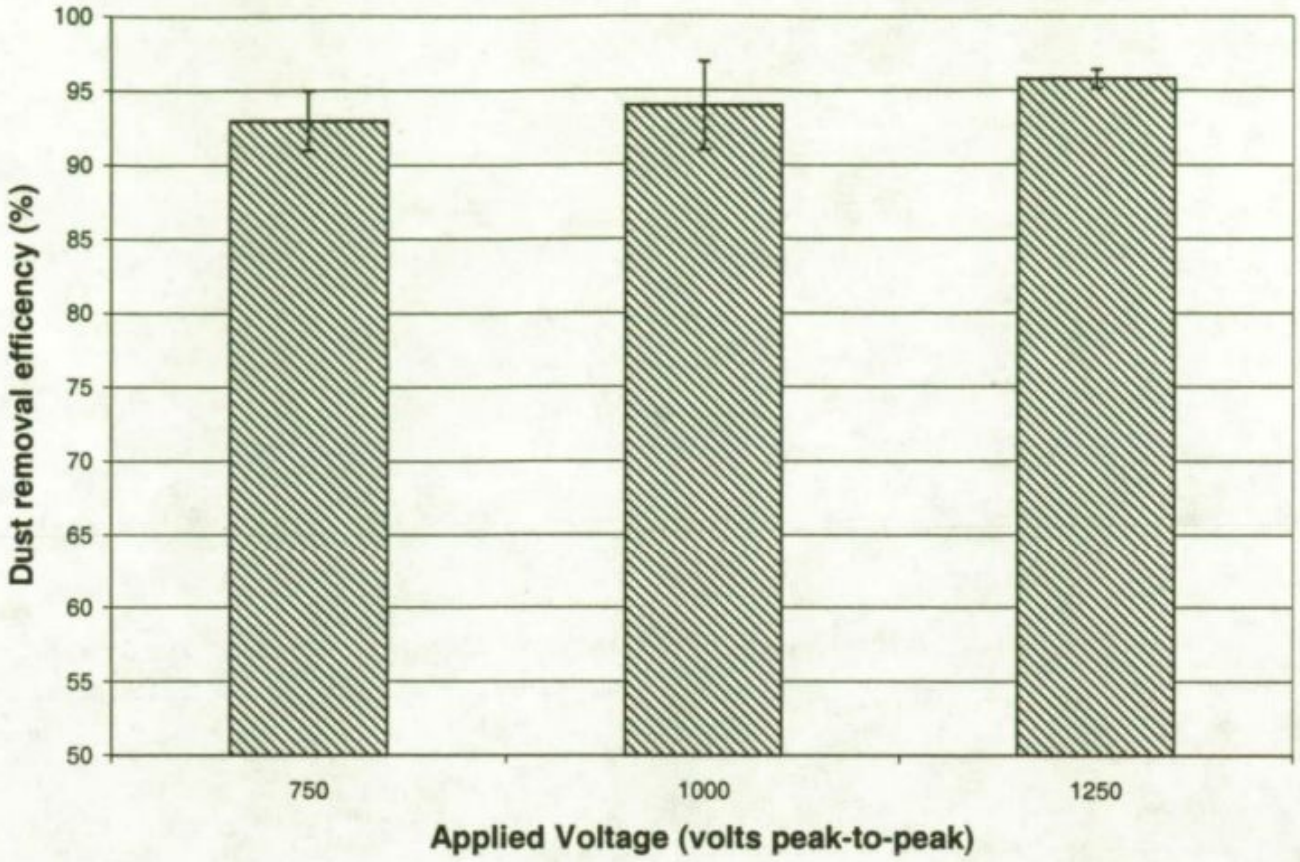


Fig. 14. Dust removal efficiency of a three-phase electrodynamic screen operating at 750, 1000 and 1250 volts (Electrode spacing 1.27mm, trace 0.127 mm, 4 Hz, cleaning operation time 30 s.

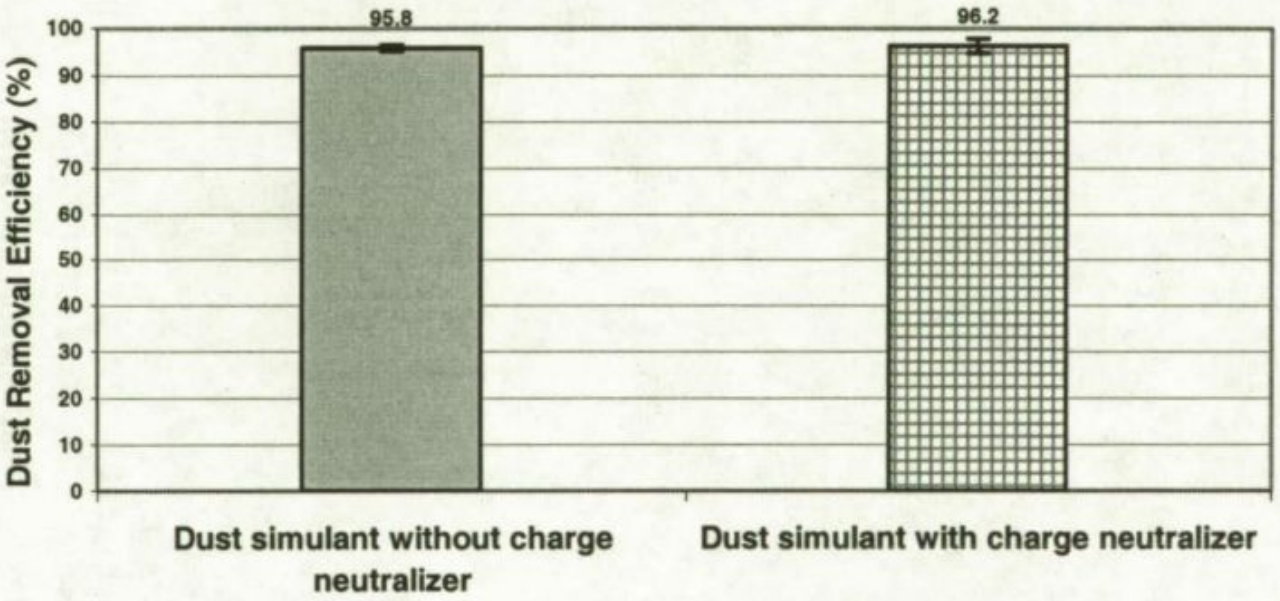


Fig. 15. Dust removal efficiency of a 3-phase electrodynamic screen with and without charge neutralizer (Electrode spacing 1.27 mm, trace 0.127mm, 1250 V peak-to-peak, 4 Hz, run time 30 s, Count Median (Aerodynamic) Diameter= 3.66 □m, d_{10}= 1.22 □m, d_{50}=9.06 □m, d_{90}=38.45 □m).