

The technology of constructing a cylindrical photoreceptor

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Abstract: In this research the Fourier transform of electric field in a three-layered model with thickness t_j and dielectric ϵ_{ij} is computed, after solving three dimensional Laplace equation for Fourier transform of potential under suitable boundary conditions. Then, by studying the behavior of spread function, a three-layered photoreceptor is designed. After designing and constructing of all of the subsystems, the deposition of Al and formation of Al_2O_3 are carried out at 2×10^{-5} to 5×10^{-7} mbar pressure. Then coating of Se is carried out under 2×10^{-7} mbar pressure, 250 °C boat temperature and 95°C substrate temperature in 120 min. Electrical resistance of the prepared sample was measured to be higher than $10^{12} \Omega$ in dark and about zero in than light, this values are suitable for making electrostatic latent image. To test its function in practice, the sample was mounted in Xerox machine and images were copied successfully.

Keywords: *Photoreceptor, Latent Electrostatic Image, Vacuum Coating, Amorphous Selenium.*