AZO bilayer films were deposited on honeycomb (HC) periodic textured glass morphologies by RF magnetron sputtering system using argon gas on seed layer having a high mobility properties. The resulting 0.8 µm thick layers are characterized by a high transmittance of 83.1 % to longer wavelength region and hall mobility over 41 cm²/Vs. The haze value of HC textured glass/AZO bilayer having a characteristic of the light scattering was better than that of FTO glass as a commercial substrate, and it has a high haze value of 51% in the NIR region. There is a moderate sheet resistance of 4 ohm/sq despite AZO bilayer films on HC textured glass morphology. These properties can make into a suitable transparent electrode application for thin-film silicon solar cells with the possibility of enhanced current density.

Figure 1: SEM image of AZO bilayer films on honeycomb (HC) textured glass morphology