

## Iranian Start-up Succeeds in Developing Scanning Electron Microscope

2020-10-06

Iran's Sharif Solar (IRASOL) Co., a spin-off from the Sharif University of Technology, has succeeded in producing a Scanning Electron Microscope (SEM) with the resolution of 20 nanometers. Such microscopes are employed for studying the morphology and chemical composition of materials surface and determining the thickness of thin-films.

Electron microscopes are of the most common instruments used for analyzing materials in the nanoscale, by which morphology, dimension, and the chemical composition of materials surface can be studied.

Unlike optical microscopy which uses visible light, images are formed by a beam of electrons in SEMs. Considering the shorter wavelengths of electron beams compared to visible light, SEM images have much higher resolution than those of optical microscopes. Therefore, microscopic structure analysis in higher resolution should be performed by electron microscopes.

[IRASOL](#)'s SEM containing a tungsten filament gun enjoys the maximum magnification of 100,000 times and the acceleration voltage of 1 to 30 kV.

IRASOL is a company, located in Sharif Science & Technology Park ([Sharif Techpark](#)), has been established by some researchers of solar cells at the [Sharif University of Technology](#). In addition to manufacturing and laboratory equipment, the company produces a wide range of laboratory materials used in printed electronics applications such as solar cells and LEDs.

The company also provides various technical services in this field. Spray pyrolysis systems, ultrasonic spray systems, and profilometry equipment are the other products introduced by this company.