

How Does a Scanning Electron Microscope Work?

The scanning electron microscope (SEM) is a microscope that uses electrons instead of light to form an image. It scans an object with a focused beam of electrons. An SEM is used for objects that are smaller than the wavelength of visible light and can have a resolution of 1 nanometer.

The SEM has many advantages over optical microscopes. They can magnify objects up to 300,000 times the size of the object which is much more than an optical microscope's average of about 1,500X. Because SEMs scan the object, they give images with a depth of field or almost like a 3-D image. An optical microscope will give you a "flat" image. Since the development of the SEM, many advancements in the fields of medicine, physical sciences, and nanoscale science and engineering have occurred. To read about an SEM visit -

<http://www.inspirestemeducation.us/tools/science-is-fun/>. To see a virtual SEM -

<http://school.discoveryeducation.com/lessonplans/interact/vemwindow.html>

