At Bar-Ilan, imaging and microscopy research is fueling advances related to medicine, communications, advanced materials and nanoelectronics.
Microscopy Research

Getting to the Small Picture

Modern microscopy can reveal what happens on the cellular and even the molecular level in biological systems. However, when we rely on light-based "optical" microscopy to investigate these processes, we are limited by the inherent limitations of light. For instance, in the late 1960s, biologists discovered that the smallest objects the eye could see were about 0.2 millimeters in size. In a whole field of playing fields, this phenomenon is now called the diffraction limit. This concept has been a major limitation, especially for biological research, as scientists are unable to see details smaller than this limit.

The multidisciplinary approach in the School of Engineering leads to technological breakthroughs that overcome the inherent limitations of optical microscopy.

Moving Microscopy Forward

A number of Bar-Ilan scientists are creating new imaging technologies that promise to revolutionize how scientists study biological systems. These technologies include advances in imaging and microscopy that are changing the way we see the world at a cellular and molecular level.

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Microscopy and Materials

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The Bar-Ilan Institute of Nanotechnology and Advanced Materials (BINA), which brings together scientists from the fields of physics, chemistry, biology, and materials science, aims to develop advanced microscopy and imaging technologies that promise to revolutionize the way we understand and manipulate biological systems.