Technologically First with Innovation

As the first commercial supplier of multilayer coated optics for the X-ray sciences, Rigaku Innovative Technologies (RIT) has more than 25 years of experience developing and manufacturing precision optics. While most multilayer optics are used in laboratory instrumentation such as X-ray Fluorescent Spectrometers and X-ray Diffractometers, many optics have been produced for research applications. Research and development in areas such as Synchrotron Beamline Optics, Neutron guides, Polarizers and Concentrators, X-ray telescopes, Soft X-ray microscopes, Plasma research and Extreme Ultra-Violet (EUV) Lithography have all benefited from RIT high performance multilayer optics.

Multilayer Coating Capabilities That Lead the World

In order to make our multilayer optics the worlds finest, we have to take extreme care in controlling the deposition layer thickness or d-spacing. Through our own research and development projects, and familiarity with coating tools and technologies, RIT can produce the following exceptional results:

- d-spacing accuracy better than 0.02% for both uniform and graded (profiled) Multilayer
- down to 1 nanometer

We have over 9 plasma deposition systems including two of the worlds largest. This gives us the ability to respond to custom requests for some of the most demanding applications.

Materials:
W/Si, W/C, Ni/Ti, Ni/B4C, Ni/Cr, Cr/Sc, Mo/Si, Mo/4C, La/B, V/C, Ru/B4C, Al2O3/B4C, Si/C, Si/C, Fe/Si, Cr/B4C, Si/B4C, etc...

Uniform or Graded: lateral, radial, bilateral (2D)
Size: 3mm to 1.4 m

Figure 1: RIT produces multilayer coatings from a wide variety of material systems. Each material bi-layer is chosen to address a specific performance criteria such as absorption edges and energy range.

“Osmic Optics introduced high quality Multilayer Optics to the Analytical X-ray market. Ovonyx™ brand optics continue to be the global standard for Multilayer Technology”

— Bill Bowman, Sales Acct Mgr., North America and ASIA
Optics & Capabilities

Multilayer Optics have contributed to a revolution in the X-ray Sciences due to their ability to provide excellent optical efficiency with good resolution performance compared to the natural crystals they often replace. Resolution performance is highly dependent on the accuracy of the multilayer period and the grading required to conform to the optical surface. RIT’s capabilities include:

- Depth graded structures
- 2-dimensional laterally graded structures
- Optics up to 1.4 meters in length

Independent Commercially Funded Research

Our funded research programs have continually improved the accuracy of our coatings. Not only have we developed many new techniques for accurate deposition, we have focused on the practical applications of these technologies for commercial products. Many years of corporate partnerships are based on our abilities for:

- The world’s largest OEM Multilayer Supplier
- A comprehensive and knowledgeable team of support scientists to help you meet your design goals

Your optic design process is our first goal. RIT can help you with a new application and recommend solutions. If you are considering a multilayer optic for any X-ray application, our team of scientists and engineers can help you with the design and production of your specific requirements. Contact our team of experts for more information.

Figure 2: RIT’s newest Deposition System has the ability to coat a 750mm diameter optic, using standard and Reactive Sputtering capabilities.

Figure 3: The above graph demonstrates the exceptional coating uniformity over the 200mm axis of a large aspherical illumination optic. RIT’s coating uniformity is better than 0.02%.

Figure 4: RIT’s experienced team of scientists and technicians consists of 14 Ph.D’s and over 200 patents

日本代理店：ラドデバイス株式会社
RAD Device  http://www.rad-dvc.co.jp