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A Word From Our President

As a lover of koi, I have always enjoyed watching the interaction of fish with each other as well as the group behavior that is triggered by external stimuli (e.g. food or perceived danger). The addition of a new fish to a pond can have an immediate effect on the overall group behavioral patterns while at the same time each fish retains its own distinctive traits and characteristics. It may be a stretch to say that fish have "personalities," but I have definitely lost my desire to drop a baited hook in a lake.

In a similar sense, the addition of new employees can have an immediate and positive impact on the overall group performance by bringing in to the company new perspectives and skill sets. While we have hired many new people over the last few years, I would like to mention a few who are representative of the breadth and depth of our expanding company profile. Eighteen months ago, Richard Crouse joined us from Harvard University, where he worked for Don Wiley for 18 years and helped train a large contingent of today/s protein crystallographers. Last year, Wenjeng Li joined us as a senior design engineer from Bristol-Myers Squibb. His former team recently won the 2003 Thomas Edison Patent Award in the category of Enabling Technology for work he participated in at BMS. Tom McNulty joined our XRD group in January as Director of Product Marketing. Tom brings with him a resume of varied XRD experience and a contagious personality to boot. There are many more employees I could talk about, but the editor judiciously limits my space!

Paul Swepston

The Rigaku Journal

Vol. 20 No. 2 December 2003

- X-ray Diffraction Patterns of Two Semiconducting Clathrates, $Sr_8Ga_{16}Ge_{30}$ and $Cs_8Na_{16}Ge_{136}$: Promising Candidates For Thermoelectric Applications by James A. Kaduk, Winnie Wong-Ng, and George S. Nolas
- New Approach to Eliminate the Instrumental Aberrations From Powder X-ray Diffraction Data Based on a Fourier Method by Takashi Ida
- Simple X-ray Dark- and Bright-field Imaging Using Achromatic Laue Optics by Masami Ando, Anton Maksimenko, Hiroshi Sugiyama, Wanwisa Pattanasiriwisawa, Kazuyuki Hyodo and Chikao Uyama
- Microanalysis With a Polycapillary in a Vacuum

Rigaku at PITTCON 2004

Every year, it seems that PITTCON grows larger and larger. This year was no exception. Attendance in Chicago was up by 3,000. According to PITTCON Today, the daily newspaper for the show, attendance was over 25,000 strong. Visitors from all over North America and the world, braved the cold weather to see the latest and greatest in analytical instrumentation and method development. The Rigaku booth attracted lots of interest! Not only was the booth a new design (very open and inviting with clean lines), but the new MiniPac was a big hit.

The MiniPac, a combination ZSXmini and MiniFlex™ interfaced with a robot, stopped many people walking past the Rigaku booth. Everyone was fascinated with the moving robot and equally impressed with the numerous possibilities presented with a combo XRF/XRD system. Rigaku/s lead count was 175 just from this show, many of whom were interested in the MiniPac. While cement, mining, and

Chamber by Christina Streli, Natalia Marosi, Peter Wobrauschek and Barbara Frank

- The Simultaneous Measuring Instrument for X-ray Diffraction (XRD) and Differential Scanning Calorimetry (DSC) by P. Pianetta, A. Singh, K. Luening, S. Brennan, T. Homma, N. Kubo and M. Watanabe

iron/steel plants were among the many industries targeted by the new instrument, other industry representatives were just as intrigued with the joint system. We even had one gentleman with the Dairy Association in New Zealand interested!

Overall, the show was a great success and lots of fun. We were able to catch up with old friends, meet new customers and show off how superb Rigaku is. With our continued instrument advancements (the Mini-Z Sulfur Analyzer) and superior customer service, Rigaku will continue to remain the #1 X-ray Company in the world. We look forward to PITTCON 2005 in Orlando, Florida. See you there!

Calendar of Events

Rigaku will be attending the following conferences in the second quarter of 2004:

- British Crystallographic Association
  Manchester, England
  April 6-8
- MRS Spring
  San Francisco, CA
  April 13-15
- EXPOMIN
  Santiago, Chile
  April 20-24
- IEEE/PCA Cement Technical Conf.
  Chattanooga, Tennessee
  April 25-30
- Structural Biology Symposium
  Galveston, TX
  April 30-May 1
- APS User Meeting
  Chicago, IL
  May 4-6
- High Resolution Drug Design Meeting
  Bischenberg-Strasbourg, France
  May 13-16
- Mid-Atlantic Meeting
  Baltimore, MD
  June 2-4
- ICCBM (International Conference on the Crystallization of Biological Macromolecules
  Beijing, China
  June 5-8
- NorthWest Crystallography Workshop
  Seattle, WA
  June 25-27
- AsCA (Asian Crystallographic Association)
  Hong Kong, China
  June 27-30

Minstrel I

Minstrel I is the latest addition to the CrystalMation™ product line providing an affordable high resolution desktop imaging system to protein crystallography labs.

Designed to fit on a lab bench as well as into any budget, the compact Desktop Minstrel is a fully modular and expandable protein crystal imaging and analysis system. With its extensive list of options, the Desktop Minstrel can be configured to meet a broad range of budget and performance requirements, from low-throughput research applications to ultra-demanding high-throughput drug discovery programs.

The Minstrel I utilizes an ultra-high-resolution imaging system that can quickly and consistently image hanging, sitting, and microbatch experiments in a abroad range of plate types. A programmable light source optimizes the imaging conditions for each drop and plate type.

From the fully functional standard configuration to a setup that is optimized from the extensive list of options, the Desktop Minstrel is the perfect solution every time.

Come see the Desktop Minstrel for yourself at the Protein Society meeting and at the BCA.

Upcoming Presentations

Joe Ferrara will be presenting: Away from the edge: SAD phasing from the sulfur anomalous signal measured in-house with chromium radiation at Protein Crystallography in Drug Design at 2:00 pm, Wednesday, March 31.

Joe Ferrara will be presenting the poster *Away from the edge: SAD phasing from the sulfur anomalous signal measured in-house with chromium radiation* at the Frontiers in Structural Biology (Z2) Keystone meeting, April 13 - 19, 2004 at the Snowbird Resort in Utah

Rigaku News

Rigaku is pleased to announce that the new improved d*TREK® version 9.1 is available for downloading now from our web site. Version 9.1 has several enhancements and bug fixes over previous versions: it is easier to use, has improved algorithms (especially spot finding, indexing, refinement, and integration), runs faster, and has some scripting modes. It also supports most image formats (IP and CCD), including those from synchrotron beamlines.

CrystalClear™ 1.3.6SP0 is now available. This version is available to all current CrystalClear users who have a current CrystalClear software support contract.

Mini-Z Sulfur Analyzer

Features & benefits

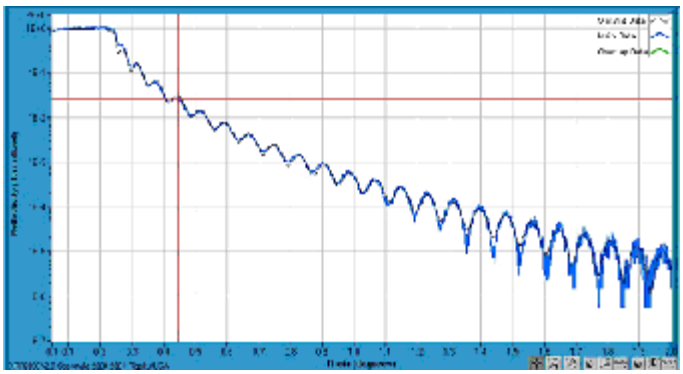
- WD-XRF sulfur analyzer ? meets ASTM 2622 requirements
- Microprocessor controlled ? requires no additional computer requirements
- 110 V requirements ? plugs into any available standard electrical outlet
- Air cooled ? no external cooling needed
- Compact size ? frees up valuable lab space
- Ideal for the petrochemical industry
- LLD of 0.3 ppm for sulfur
- Easy to use ? anyone can use regardless of training

XRR Application Note

High Resolution X-ray Reflectometry Analysis of Thin Films

AMIA Laboratories has always been on the cutting edge of X-ray Diffraction (XRD), X-ray Fluorescence (XRF), and X-ray Reflectometry (XRR). Never has this been more obvious than with AMIA/s extensive analytical experience with High Resolution XRR. Utilizing the Rigaku ATX series, AMIA can accurately characterize thickness and density of film stacks between 50 A and 7000 A. By utilizing the following optical features, analysis of thin films has never been easier:

- High Flux Multilayer Parallel Mirror
- Ge (220) 2-bounce and 4-bounce
- Ge (440) 4-bounce monochromators
- Ge (220) 2-bouce Analyzer Crystal
- Stepping motors with 0.0001? of accuracy in theta and 2-theta.



XRR: Thickness, density and roughness of boron doped $Si_{(x)}Ge_{(1-x)}$ (concentration gradient)/Si (substrate)

Epitaxial, polycrystalline, amorphous and other films can also be measured with

little difficulty. With over 70 years of combined experience, AMIA Laboratories is your contract services answer. To learn more about High XRR Analysis of Thin Films and how AMIA Laboratories makes it easy, click on the link below for Application Note T07.

Training Sessions

- XRF:
  - June 8-10, 2004
- XRD:
  - (MiniFlex) April 6-7, 2004
  - (Ultima and MultiFlex) April 6-8, 2004
- Macromolecular :
  - September 15-17, 2004

Contract Protein Crystallography

ActiveSight Contract Structural Biology Open for business

ActiveSight™, Rigaku's complete contract structural biology division is open for business in San Diego. The company was founded to accelerate customer's drug discovery efforts by crystallizing difficult human drug targets, such as kinases, using the latest in high-throughput gene-to-structure technology. ActiveSight's scientific team, Duncan McRee, President; Ron Swanson, CSO; Mark Knuth, CTO and Les Tari, Director, Gene to Structure offer decades of experience in the production and crystallization of human proteins.

"We're focusing on offering extraordinary value," states Duncan McRee. Towards that end, ActiveSight is building a portfolio of available proteins starting with kinases and cytochromes. Researchers interested in these proteins will be able to acquire rapid structural information from co-crystals with their compounds. ActiveSight will also serve as a demonstration site for the HomeLab ™ and ACTOR™ automated crystal transfer, as well as the RoboDesign® CrystalMation system.

The ActiveSight team encourages you to contact them at info@rigaku.com.

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