

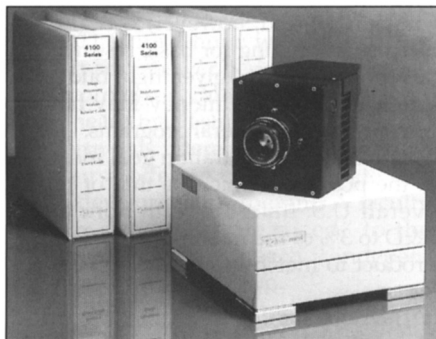
*A summary of new products and services  
for materials research...*

**Fluorescence Monochromator:** IBH Consultants' Model 5000M optical monochromator is suitable for time-domain fluorescence spectroscopy, offering high throughput  $f/3$  optics, 1 to 32 nm band-pass, time dispersion of 0.13 ps/nm, guaranteed light tightness, and an externally adjustable eight-position slitwheel. The system can be coupled with other equipment and is compatible with IBH System 5000 sample chambers, coupling optics, photomultipliers, and more.  
**Circle No. 70 on Reader Service Card.**

**Cerium Guide:** Free 42-page booklet from Molycorp describes the role of cerium in chemical technology. A general introduction to cerium is included, along with details on sources, production, and applications spanning metallurgical, glass, ceramic, phosphor/luminescence, catalytic, and chemical uses. Two similar booklets containing notes on the lanthanides and related elements are also free of charge.  
**Circle No. 73 on Reader Service Card.**

**Cryogenic Cable:** Lake Shore's Cryo-Cable™ provides fatigue resistance, crush resistance, and low heat leakage in a superconducting cable. Four 203- $\mu\text{m}$  superconductive wires each consist of a 128- $\mu\text{m}$ -diameter NbTi core and a jacket of Cu-10 wt% Ni. The wires are connected with a 25-mm twist pitch, and the cable is overbraided with 304 stainless steel. Teflon (PFA) is then extruded over the cable for protection. The CuNi wire surface may be soldered with rosin fluxes, and the wire insulation is heat strippable.  
**Circle No. 74 on Reader Service Card.**

**Scanning Probe Microscope:** The NanoScope Dimension 3000 from Advanced Surface Microscopy provides high-resolution 3-D imaging of solid surfaces and supports numerous scanning probe techniques. In addition to imaging topography and measuring roughness on hard and soft surfaces, the instrument senses elasticity, friction, and magnetic and electric forces. Large objects, such as 8-in.-diameter silicon wafers, require no sample preparation. Applications include molecular resolution in polymer and biomaterial studies, and use in industries such as electronics, chemicals, metals, and plastics fabrication.  
**Circle No. 80 on Reader Service Card.**



**High-Speed Cooled CCD Camera:** With programmable pixel data rates from 500 kHz to 8 MHz and a dynamic range up to 4096:1, Astromed Ltd.'s 4100 camera from Micro Photonics is suited for real-time imaging. Image processing and analysis software runs on Microsoft Windows. Users can define a read-out sub-array from a full area to  $8 \times 8$  pixel area in eight pixel steps. Applications include fluorescence microscopy, x-ray nondestructive testing, immunoassay, chemiluminescent imaging, Raman spectroscopy, and more.  
**Circle No. 79 on Reader Service Card.**

**Personal AFM, STM, and UHV/STM Microscopes:** Burleigh Instruments' Personal SPM microscopes combine affordability and simplified operation. The systems offer resolutions up to 100 times those of SEM, along with 3-D measurement precision. The Personal AFM provides subnanometer resolution for solid samples, and the benchtop Personal STM provides atomic resolution for conducting samples. The Personal UHV/STM scanning head can be used via an 8-in. port for resolution up to 0.1 Å. Applications include semiconductors, polymers, metals, ceramics, optics, coatings, fibers, and more.  
**Circle No. 78 on Reader Service Card.**

**Nanocrystalline Ceramic and Metal Powders:** Nanophase Technologies' ceramic and metal particulates are available in sizes ranging from 5–100 nm (0.005–0.1  $\mu\text{m}$ ). Standard materials include  $\text{Al}_2\text{O}_3$ ,  $\text{TiO}_2$ ,  $\text{Fe}_2\text{O}_3$ ,  $\text{CeO}_2$ ,  $\text{Cr}_2\text{O}_3$ ,  $\text{Y}_2\text{O}_3$ , Al, Co, Cu, Fe, Ni, Si, Au, Ag, and Pd. Different materials, size ranges, phases, dispersions, and other variables are available for specific applications.  
**Circle No. 77 on Reader Service Card.**

**Nano-Indentation Hardness Tester:** Wilson Instruments' UMIS-2000 enables users to investigate elastic, plastic, strain hardness, creep, fracture, and other mechanical properties of coatings, thin films, and near-surface regions of materials ranging from hard coatings of titanium nitride and diamond film to polymers. The PC-based system consists of a measuring head, mounting and scanning stage, video microscope, and software for instrument control and data analysis. Surface penetration is in the micrometer to submicrometer range, and maximum applied force is 0.1 gm.  
**Circle No. 75 on Reader Service Card.**

**Flat Panel Display Surface Profiler:** The DEKTAK FPD-650 from Veeco/Sloan Technology can handle flat panel displays up to 650 mm<sup>2</sup>. The system measures step heights below 100 Å, and optional robotics provide automated operation for in-line testing. The programmable sample stage affords a bidirectional x-y repeatability of  $\pm 1 \mu\text{m}$  per axis with a stage position accuracy of  $\pm 1.25 \mu\text{m}/25 \text{ mm}$  and  $\pm 3 \mu\text{m}/300 \text{ mm}$ . The stage permits 360°  $\theta$  rotation with  $\pm 0.2$  arc minutes repeatability. A stage for substrates up to 850 mm<sup>2</sup> is also available.  
**Circle No. 71 on Reader Service Card.**

**Spectroscopy Guide:** Free 264-page guide from Instruments SA provides product details and suggestions for improving optical spectroscopic systems. Features are J-Y/Spex spectrometers, light sources, monochromators, sampling accessories, detectors, controllers, software, and more. Definitions and descriptions for maximizing optical throughput and detection techniques are also included.  
**Circle No. 72 on Reader Service Card.**

**Laboratory Tube and Split Furnaces:** Lab-Temp's FH Series furnaces can achieve 1800°C intermittently in air and can be used with TGA systems to HMOR test for ceramics. Available in four operating ranges (1540–1800°C), the units' inside diameters range from 2–6 in. with heat lengths of 4–11 in. Units feature molybdenum disilicide heating elements, prefired insulation for reduced shrinkage and bakeout procedures, and vacuum cast ceramic insulation for high temperatures and low heat loss. Custom dimensions and other options are available.  
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# MRS 1994 FALL MEETING SESSION SCHEDULE

Symposium	Location	Monday, 11/28			Tuesday, 11/29			Wednesday, 11/30			Thursday, 12/1			Friday, 12/2	
		a.m.	p.m.	eve.*	a.m.	p.m.	eve.*	a.m.	p.m.	eve.*	a.m.	p.m.	eve.*	a.m.	p.m.
A: Beam-Solid	Salon A/B (M)			(W)									(W)		
B1: Thin-Film & Surf. Struc. & Morph.	Salon F (M)			(W)									(W)		
B2: Thin Films/Stress. & Mech. Prop. V	Salon G (M)									(W)			(W)		
C: Struc./Prop. of Interf. in Ceramics	Cape Cod/Hyannis (M)									(S)					Essex So. (W)
D: Atomic Level Cont. of Epitax. Heterost.	Salon H/I (M)			(W)				Salon F (M)					(W)		
E: Chem. Perspect. of Microelec. Matls.	Salon C/D (M)									(W)					
F: Microcryst. & Nano-cryst. SC	Salon E (M)					(W)							(S)		
G: Fullerene Materials	Essex Center (W)					(W)									
H: High T <sub>c</sub> Superconductivity	America South (W)			(W)									(W)		
I1: Materials for Smart Systems	Essex South (W)					Parlm. (W)	(W)	Essex E. (W)	Essex S & E (W); Salon C/D (M)						
I2: Ferroelectric Thin Films IV	Essex South (W)									(S)					
Ja: Engr. of Nano-struct. Matls.	Constitution (S)						(S)								
Jb: Grain Size & Mech. Prop.-Fund. & Appl	Liberty F (S)														
K: CVD of Refractory Metals/Ceramics III	Liberty A (S)	Repub. B (S)								Indep. E (S)					
L: High-Temp. Ord. Intermetallic Alloys	Republic A & B (S)			(S)						(S)					
M: Ceram. Matrix Comp.- Adv. High-Temp. Struc. Matls.	Independence East (S)														
N: Dynamics in Small Confining Systems	St. George C/D (W)									(W)					
Oa: Comp.Apprch./App I.to Predict. Prop. of Complex Matls.	America Center (W)						(S)						(S)	Salon J/K (M)	Salon J/K (M)
Ob: Appl. of Innov. Knowl. Bases in Matls. Design	America Center (W)														
P: Fractal Aspects of Materials	Salon J/K (M)							Salon F (M)		(W)					
Q: Defects in Polymer Materials	Adams (W)														
R: Polymer Matrix Composites	America North (W)			(W)											
S: Biomolecular and Biomimetic Matls.	Staffordshire (W)														
T: Advanced Catalytic Materials	Independence Ctr. (S)						(S)								
U: Solid State Ionics	Essex W (W)			(S)			(S)			(S)					
Va: Cement-Based Systems	Yarmouth/Vineyard (M)														
Vb: Cementitious Materials	Yarm./Viny (M)														
W1: Porous Materials	Independence West (S)						(S)								
W2: Hollow & Sol. Spheres & Microspheres	Constitution (S)														
X: Frontiers of Matls. Research	Salon C/D (M)														
Y: Microstructure of Irradiated Materials	Orleans/Prov. (M)						(W)			(W)			(W)		
Za: Opt. Wavegde. Materials	Liberty E (S)														
Zb: Matls. for Opt. Lining	Liberty C (S)														
AA: Appl. of Synchr. Rad. Tech. to Matls. Sci.	Regis (M)			(W)											Salon H/I (M)
BB: Neutron Scattering in Materials	Essex North Ctr. & E. (W)			(W)			Essex N.Ctr. (W)								

eve\* = Evening Poster Session (M) Boston Marriott Hotel; (S) Sheraton Boston Hotel; Posters: Grand Ballroom; (W) Westin Hotel, Posters: America Ballroom  
 Note: Shaded blocks indicate sessions