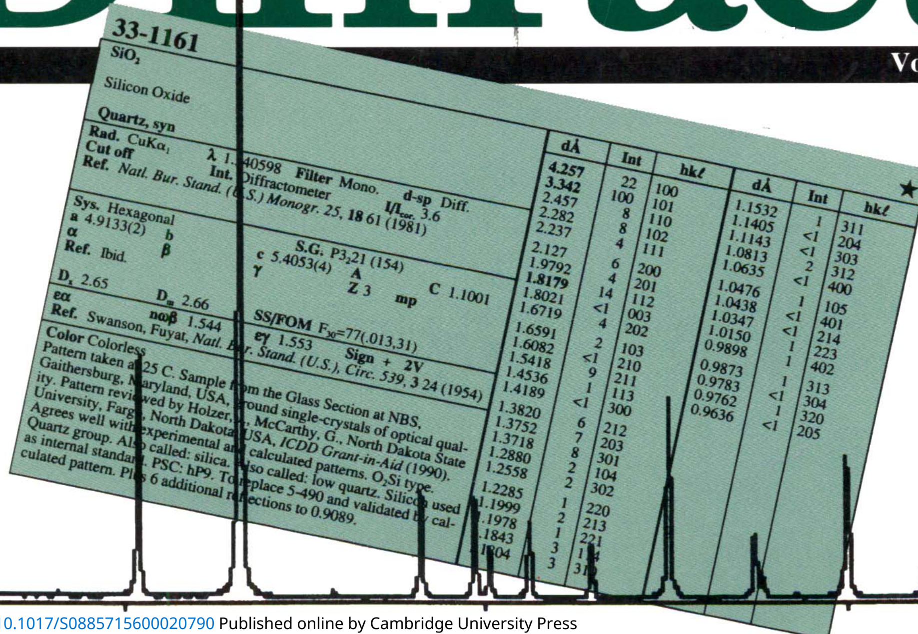
Powder Diffraction

An international journal of materials characterization

Volume 13 Number 4 December 1998



33-1161

SiO_2

Silicon Oxide

Quartz, syn

Rad. CuKα_1 **λ** 1.540598 **Filter** Mono. **d-sp** Diff.
Cut off **Int.** Diffractometer **I/I$_{cor.}$** 3.6
Ref. *Natl. Bur. Stand. (U.S.) Monogr. 25*, **18** 61 (1981)

Sys. Hexagonal **S.G.** $P3_221$ (154)
a 4.9133(2) **b** **c** 5.4053(4) **A** **C** 1.1001
α **β** **γ** **Z** 3 **mp**
Ref. Ibid.

D$_x$ 2.65 **D$_m$** 2.66 **SS/FOM** F_{30}=77(.013,31)

εα **nωβ** 1.544 **εγ** 1.553 **Sign** + **2V**
Ref. Swanson, Fuyat, *Natl. Bur. Stand. (U.S.), Circ. 539*, **3** 24 (1954)

Color Colorless
Pattern taken at 25 C. Sample from the Glass Section at NBS, Gaithersburg, Maryland, USA, ground single-crystals of optical quality. Pattern reviewed by Holzer, J., McCarthy, G., North Dakota State University, Fargo, North Dakota, USA, *ICDD Grant-in-Aid* (1990). Agrees well with experimental and calculated patterns. O_2Si type. Quartz group. Also called: silica. Also called: low quartz. Silicon used as internal standard. PSC: hP9. To replace 5-490 and validated by calculated pattern. Plus 6 additional reflections to 0.9089.

dÅ	Int	hkℓ
4.257	22	100
3.342	100	101
2.457	8	110
2.282	8	102
2.237	4	111
2.127	6	200
1.9792	4	201
1.8179	14	112
1.8021	<1	003
1.6719	4	202
1.6591	2	103
1.6082	<1	210
1.5418	9	211
1.4536	1	113
1.4189	<1	300
1.3820	6	212
1.3752	7	203
1.3718	8	301
1.2880	2	104
1.2558	2	302
1.2285	1	220
1.1999	2	213
1.1978	1	221
1.1843	3	114
1.1804	3	310

dÅ	Int	hkℓ
1.1532	1	311
1.1405	<1	204
1.1143	<1	303
1.0813	2	312
1.0635	<1	400
1.0476	1	105
1.0438	<1	401
1.0347	<1	214
1.0150	1	223
0.9898	1	402
0.9873	1	313
0.9783	<1	304
0.9762	1	320
0.9636	<1	205

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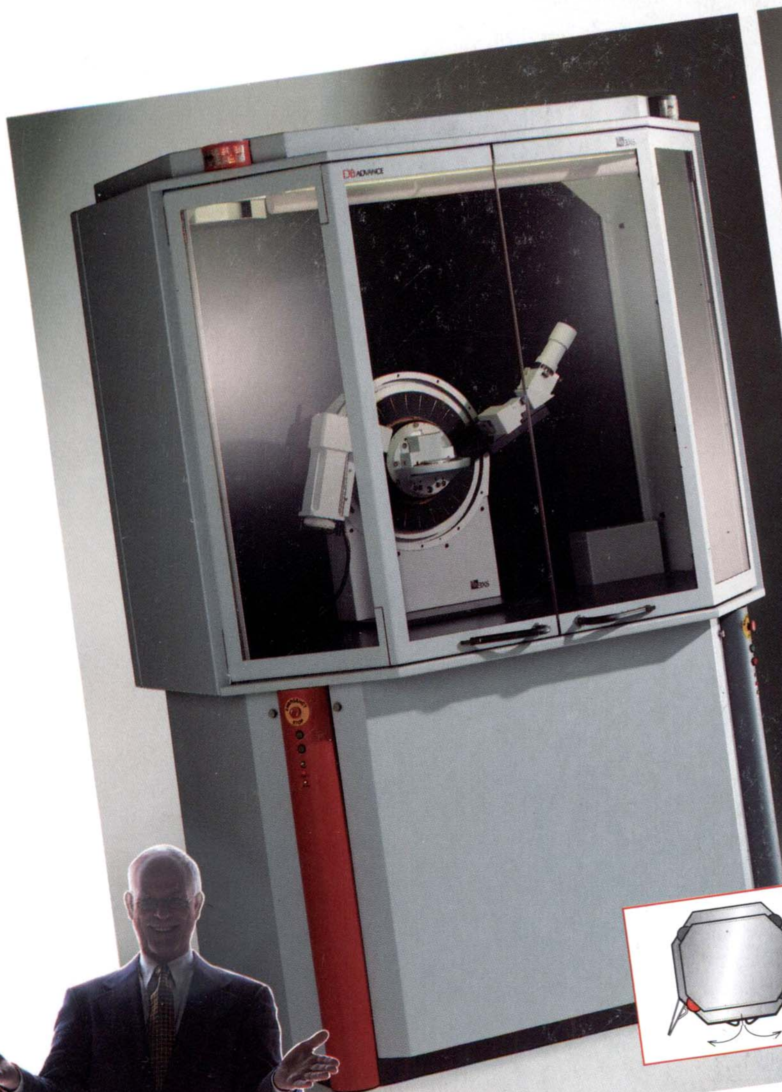

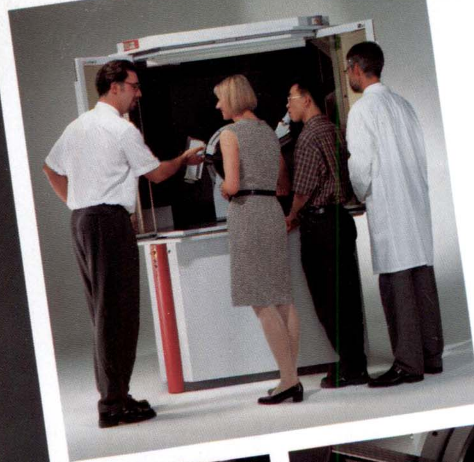
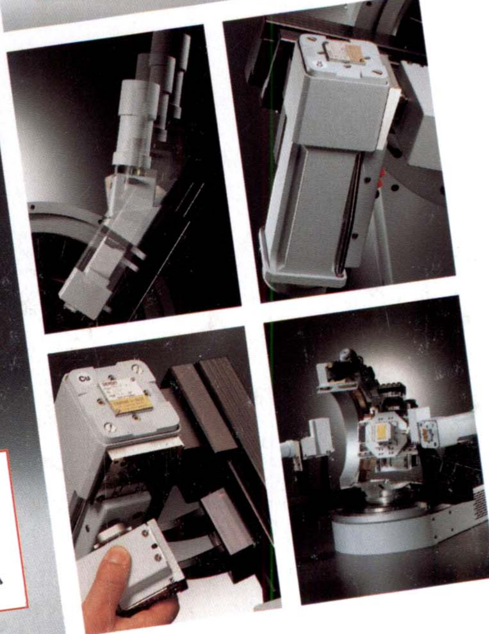
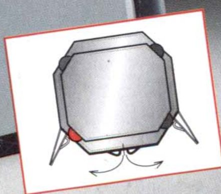
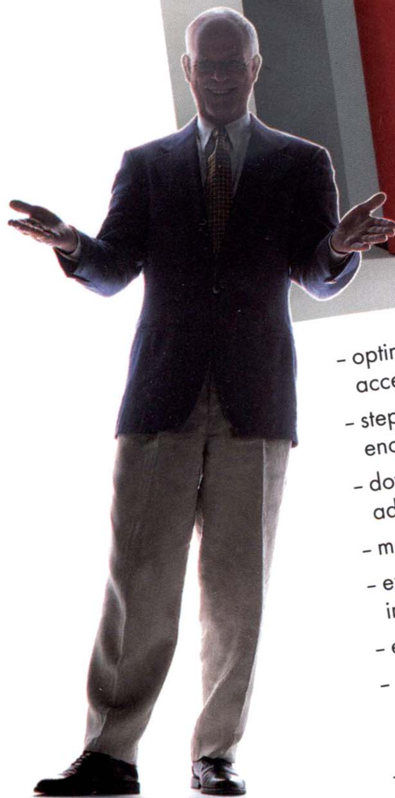

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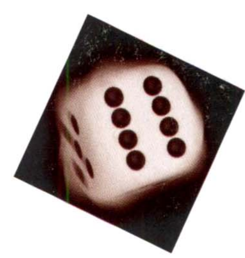

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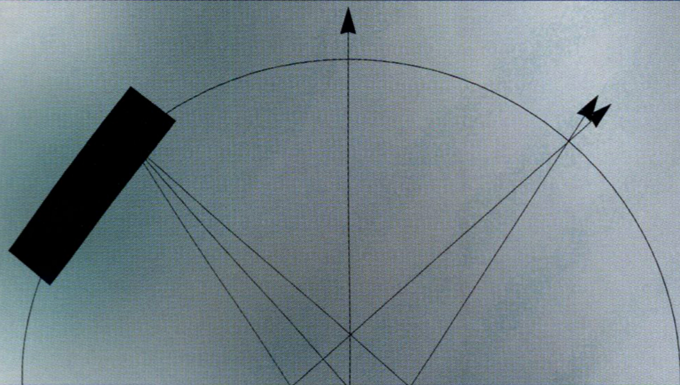

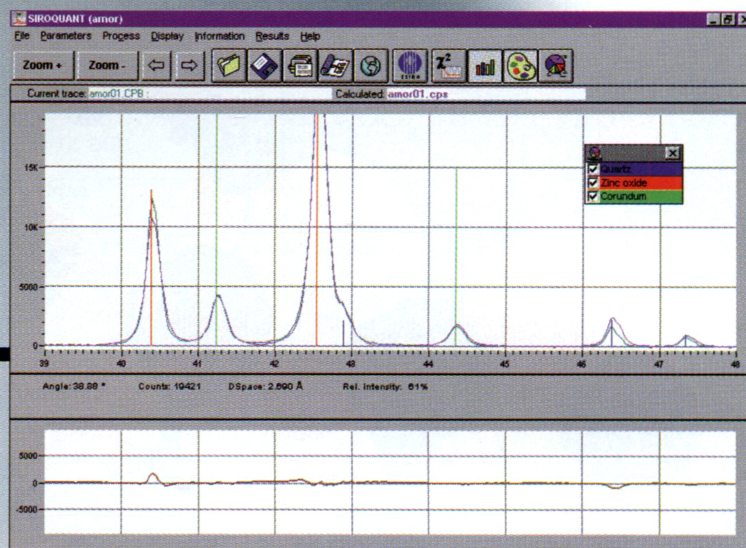

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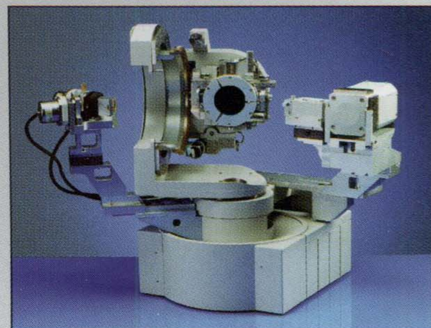

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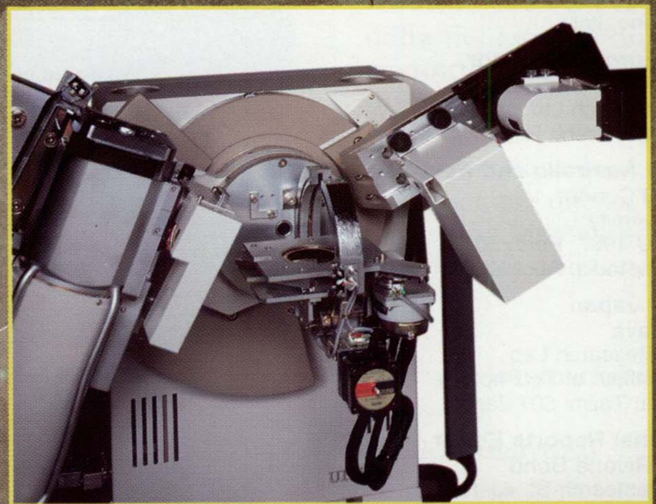

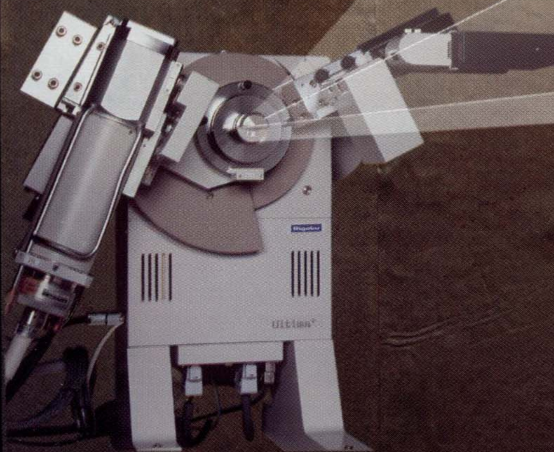

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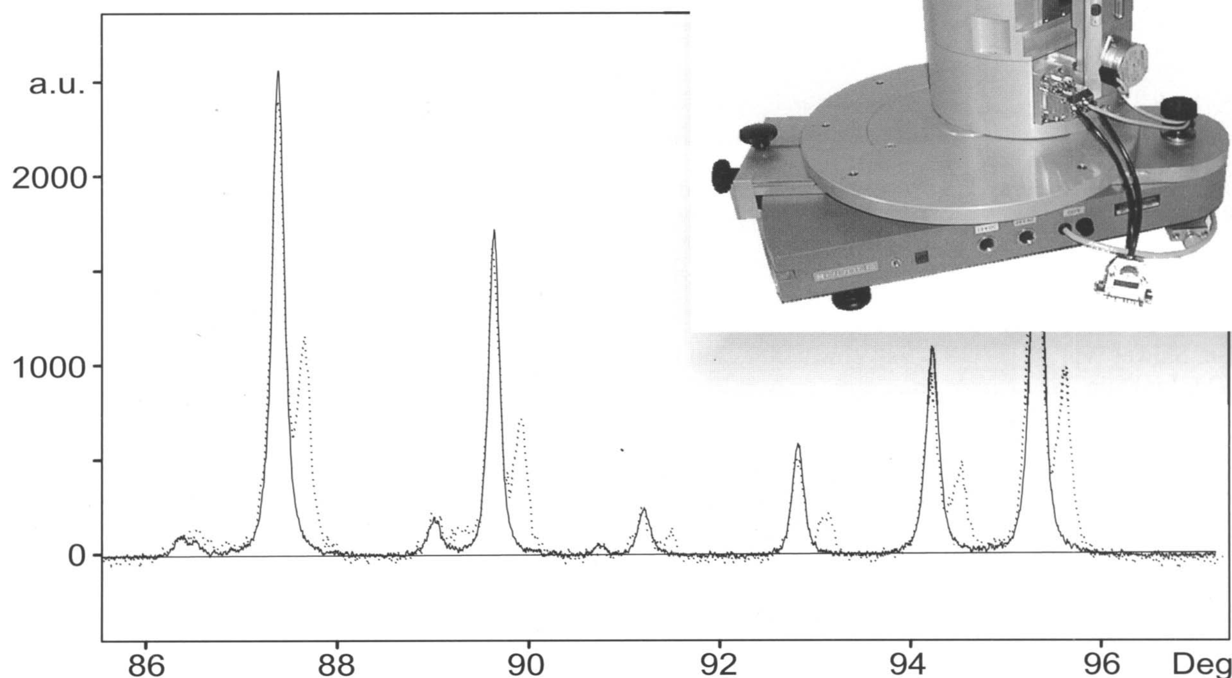

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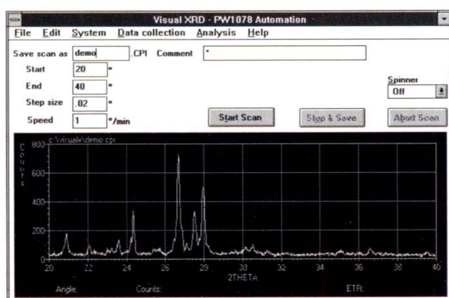

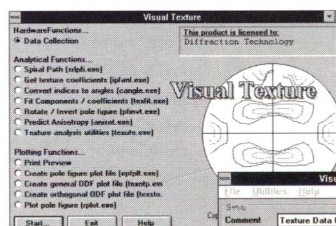

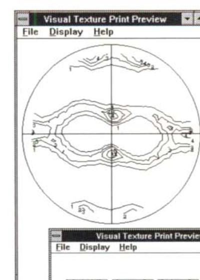

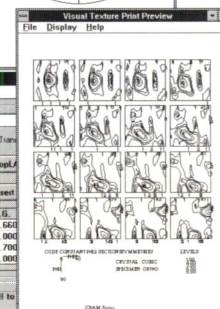

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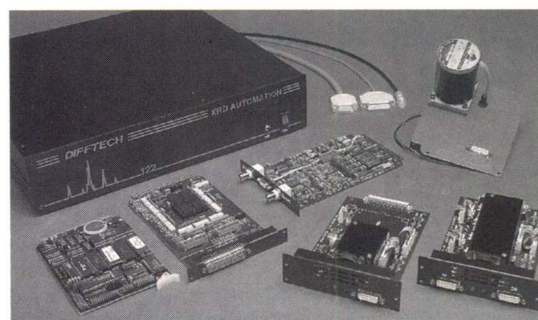

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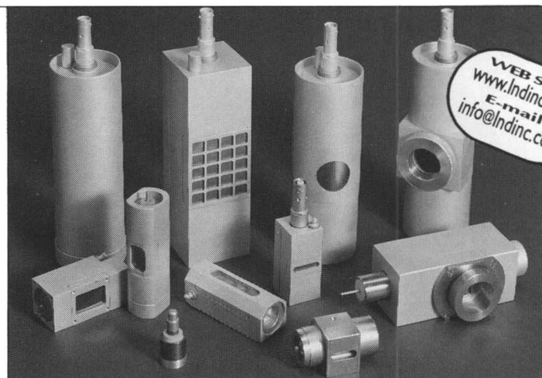

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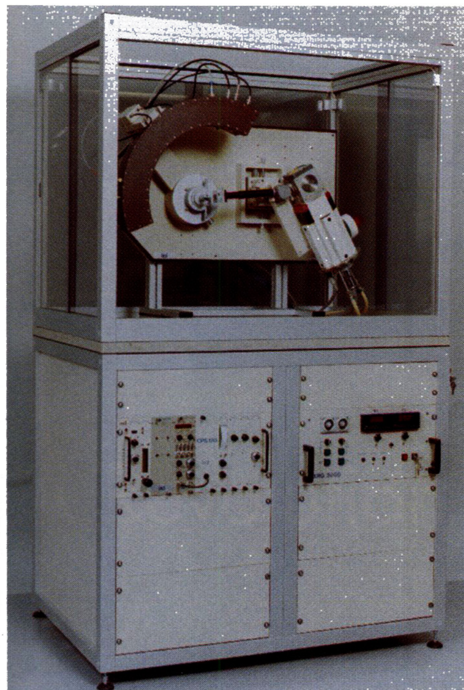

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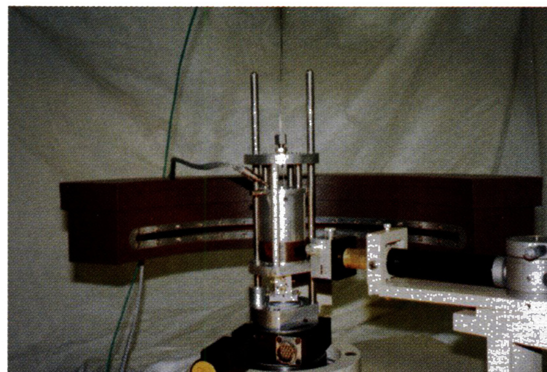

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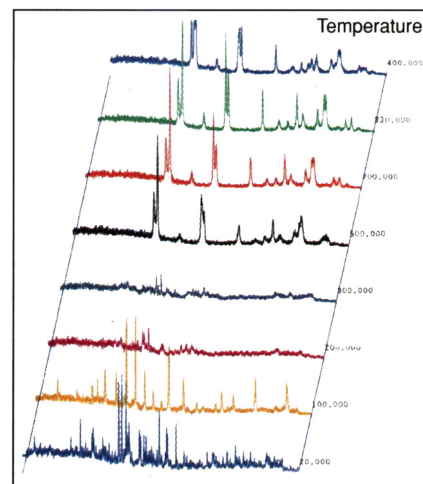

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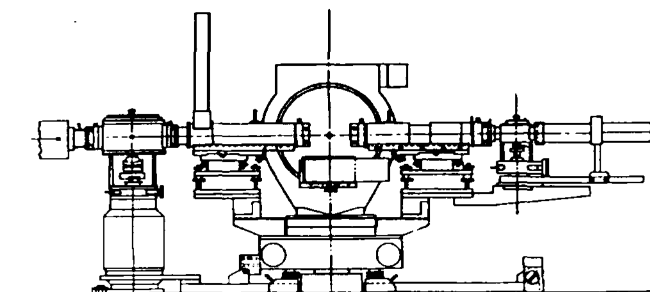

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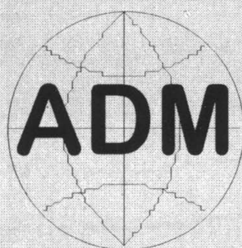

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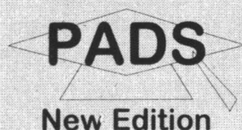

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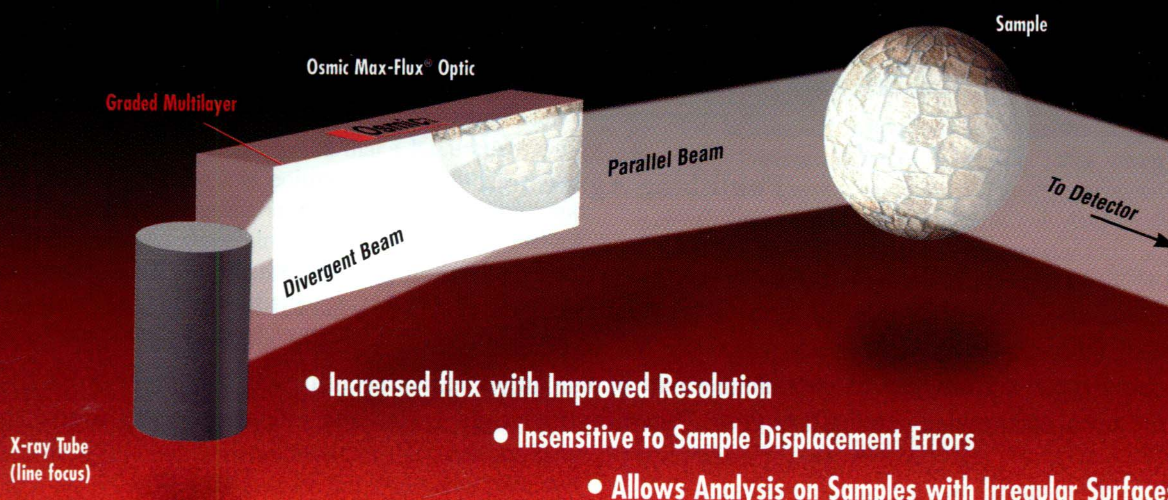

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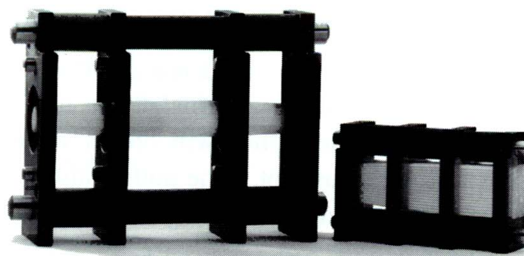

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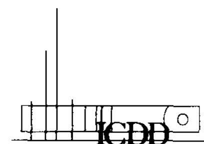

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