

Energy-Dispersive X-Ray Diffraction*

Synopsis:

Energy dispersive X-ray diffraction (EDXRD) has been performed by measurement of diffracted white X-rays with the aid of a solid state detector (SSD) connected to a multichannel pulse-height analyzer (MCA). In this method, the fluorescent X-ray spectrum and several Bragg reflections are measured simultaneously.



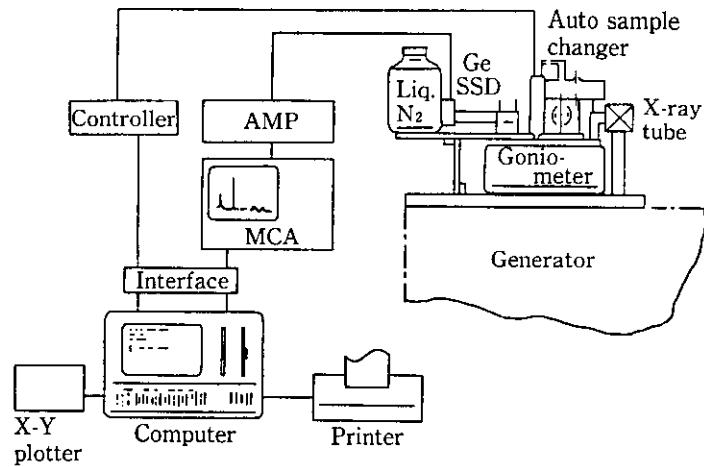
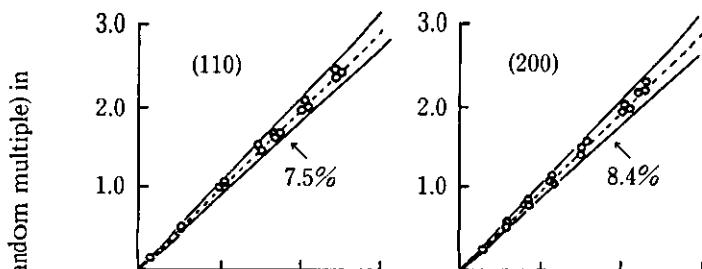


Fig. 2 Schematic representation of the energy-dispersive X-ray diffraction system



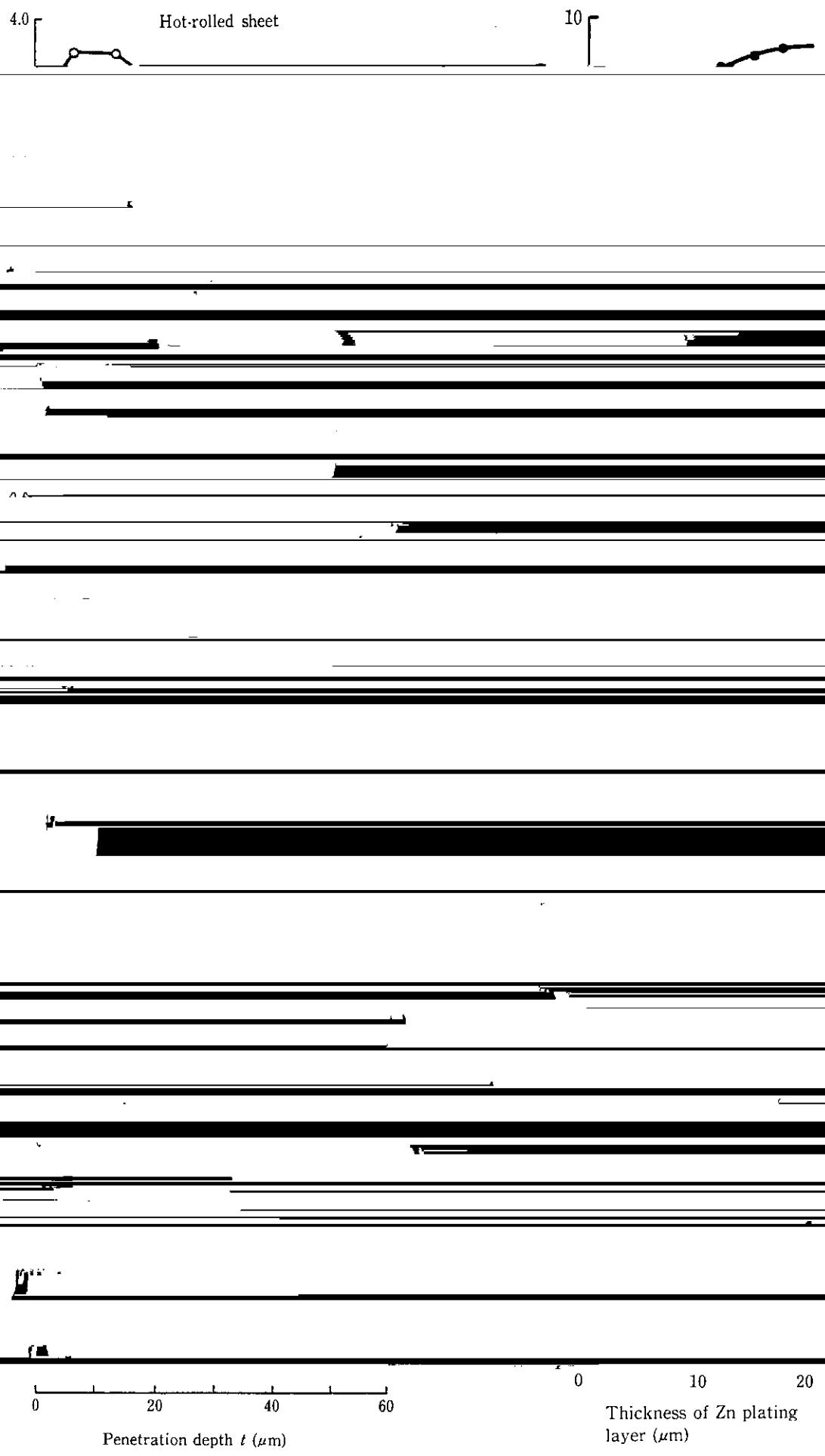


Fig. 8 Depth profiles of $\{hk\bar{l}\}$ //ND reflection intensities in a hot-rolled steel sheet

Fig. 10 Intensities of fluorescent X-ray of ZnK α in several kinds of plating thickness of the hot-dip galvanized steel sheet

layer. Such accumulation of (110) is influenced by the hot-rolling conditions and composition of the material.

Table 3. V_m, apparent volumes and diffusion coefficients.

Series	V _m (ml/g)	D _a (cm ² /s)
1	1.11	1.83
2	1.21	1.89
3	1.22	1.89
4	1.21	1.88
5	1.20	1.88
6	1.19	1.88
7	1.19	1.88
8	1.18	1.88
9	1.17	1.88
10	1.16	1.88
11	1.15	1.88
12	1.14	1.88
13	1.13	1.88
14	1.12	1.88
15	1.11	1.88
16	1.10	1.88
17	1.09	1.88
18	1.08	1.88
19	1.07	1.88
20	1.06	1.88
21	1.05	1.88
22	1.04	1.88
23	1.03	1.88
24	1.02	1.88
25	1.01	1.88
26	1.00	1.88
27	0.99	1.88
28	0.98	1.88
29	0.97	1.88
30	0.96	1.88
31	0.95	1.88
32	0.94	1.88
33	0.93	1.88
34	0.92	1.88
35	0.91	1.88
36	0.90	1.88
37	0.89	1.88
38	0.88	1.88
39	0.87	1.88
40	0.86	1.88
41	0.85	1.88
42	0.84	1.88
43	0.83	1.88
44	0.82	1.88
45	0.81	1.88
46	0.80	1.88
47	0.79	1.88
48	0.78	1.88
49	0.77	1.88
50	0.76	1.88
51	0.75	1.88
52	0.74	1.88
53	0.73	1.88
54	0.72	1.88
55	0.71	1.88
56	0.70	1.88
57	0.69	1.88
58	0.68	1.88
59	0.67	1.88
60	0.66	1.88
61	0.65	1.88
62	0.64	1.88
63	0.63	1.88
64	0.62	1.88
65	0.61	1.88
66	0.60	1.88
67	0.59	1.88
68	0.58	1.88
69	0.57	1.88
70	0.56	1.88
71	0.55	1.88
72	0.54	1.88
73	0.53	1.88
74	0.52	1.88
75	0.51	1.88
76	0.50	1.88
77	0.49	1.88
78	0.48	1.88
79	0.47	1.88
80	0.46	1.88
81	0.45	1.88
82	0.44	1.88
83	0.43	1.88
84	0.42	1.88
85	0.41	1.88
86	0.40	1.88
87	0.39	1.88
88	0.38	1.88
89	0.37	1.88
90	0.36	1.88
91	0.35	1.88
92	0.34	1.88
93	0.33	1.88
94	0.32	1.88
95	0.31	1.88
96	0.30	1.88
97	0.29	1.88
98	0.28	1.88
99	0.27	1.88
100	0.26	1.88
101	0.25	1.88
102	0.24	1.88
103	0.23	1.88
104	0.22	1.88
105	0.21	1.88
106	0.20	1.88
107	0.19	1.88
108	0.18	1.88
109	0.17	1.88
110	0.16	1.88
111	0.15	1.88
112	0.14	1.88
113	0.13	1.88
114	0.12	1.88
115	0.11	1.88
116	0.10	1.88
117	0.09	1.88
118	0.08	1.88
119	0.07	1.88
120	0.06	1.88
121	0.05	1.88
122	0.04	1.88
123	0.03	1.88
124	0.02	1.88
125	0.01	1.88
126	0.00	1.88