ATTACHMENT

Table S1. The dataset of 120 groups of DED experiments

No.	Laser power	Scanning speed	Powder flow rate	experimental height	experimental width
	(W)	(mm/min)	(g/min)	(μm)	(μm)
1	860	320	13	393.67	1309.46
2	890	560	7	285.21	1709.64
3	870	300	12	389.33	1554.98
4	600	360	8	312.72	1300.76
5	1000	600	14	602.33	2098.22
6	610	280	13	595.58	1242.84
7	790	760	14	239.02	1854.22
8	600	560	14	512.84	1313.69
9	530	320	10	362.08	1209.24
10	590	760	6	212.33	1951.24
11	940	560	12	339.49	1763.82
12	890	500	14	472.12	1522.81
13	930	260	12	467.07	1878.19
14	800	720	10	359.09	1619.25
15	780	340	9	294.31	1469.22
16	660	340	10	283.45	1398.77
17	820	580	13	364.52	1814.82
18	650	600	8	367.53	1408.34
19	840	300	14	436.84	1798.67
20	1000	480	12	532.02	2124.97
21	780	520	12	485.97	1578.18
22	950	720	9	259.54	1904.25
23	940	780	14	214.68	1959.82
24	500	480	8	355.81	1239.12
25	930	420	8	264.25	1552.69
26	620	260	8	462.35	1579.28
27	1000	720	6	226.75	1915.27
28	900	360	12	569.21	1990.41
29	510	340	12	508.82	1315.59
30	900	640	6	307.61	1664.87
31	540	420	11	428.85	1315.51
32	560	720	11	449.32	1497.18
33	930	240	6	399.11	2156.54
34	790	300	6	352.13	1546.41
35	520	500	14	399.41	1339.56
36	510	320	8	241.37	1189.72
37	830	320	11	348.44	1345.89

38	600	240	6	298.86	1277.41
39	520	780	12	297.46	1234.05
40	960	680	7	278.81	2095.23
41	770	680	6	296.22	1664.16
42	880	280	11	424.98	1549.64
43	900	480	12	374.63	1965.77
44	690	300	8	301.18	1374.85
45	710	800	12	570.78	1683.69
46	950	320	6	354.11	1222.01
47	800	360	8	402.72	1183.02
48	530	340	8	436.06	1201.63
49	900	720	8	275.95	1750.91
50	800	540	14	533.99	1741.74
51	550	320	12	514.68	1289.94
52	700	240	14	610.11	1738.2
53	750	520	7	283.17	1429.03
54	660	240	11	527.11	1070.33
55	880	400	14	446.13	1879.18
56	690	420	6	295.72	1385.42
57	840	560	8	495.14	1668.95
58	750	720	8	305.45	1530.45
59	740	260	10	425.47	1181.19
60	1000	240	8	406.7	2055.41
61	520	440	7	312.53	1297.41
62	550	620	11	406.53	1393.63
63	700	600	10	362.67	1509.14
64	800	360	12	362.6	1599.98
65	600	320	6	278.19	1274.36
66	720	780	11	357.16	1834.33
67	600	720	14	530.13	1403.98
68	630	400	8	365.45	1209.85
69	640	340	12	375.13	1428.11
70	750	560	6	269.17	1465.96
71	800	240	12	508.57	1482.39
72	520	640	11	423.21	1332.12
73	660	680	12	472.05	1500.12
74	800	480	6	266.36	1569.64
75	590	620	14	542.68	1662.11
76	600	600	12	456.2	1364.1
77	650	420	10	523.72	1408.85
78	840	280	6	317.67	1723.85
79	950	380	8	389.23	1657.32
80	710	560	10	361.79	1603.84

81	960	440	6	256.18	1757.08
82	780	480	6	292.91	1580.81
83	580	480	12	362.23	1361.91
84	950	320	14	543.79	2172.51
85	960	600	10	476.85	1927.41
86	870	440	6	333.63	1620.54
87	640	720	8	506.18	1553.15
88	900	240	10	494.08	1945.68
89	850	600	10	266.68	1947.23
90	520	300	9	327.26	1273.95
91	700	360	6	297.28	1390.16
92	550	720	10	404.81	1392.43
93	520	320	14	448.16	1260.18
94	660	250	9	294.42	1259.67
95	830	360	6	307.51	1417.45
96	620	340	10	427.24	1293.23
97	620	740	6	428.44	1467.54
98	970	660	6	315.14	2123.67
99	510	760	7	334.02	1527.71
100	900	660	8	279.36	1939.47
101	620	260	12	507.79	1196.02
102	520	760	6	305.64	1262.33
103	710	360	6	322.52	1250.05
104	670	360	8	377.54	1291.94
105	630	460	14	428.13	1341.68
106	620	300	8	377.01	1352.39
107	600	480	10	353.84	1363.61
108	560	580	10	327.85	1383.19
109	840	360	11	341.03	1395.92
110	740	400	8	334.88	1440.54
111	590	480	13	476.41	1441.19
112	770	440	8	306.01	1501.94
113	960	340	12	397.71	1532.11
114	650	240	10	460.37	1550.09
115	670	500	8	252.03	1589.62
116	800	600	8	290.43	1598.13
117	510	540	13	633.22	1651.26
118	700	720	12	407.5	1675.18
119	960	280	8	325.67	1705.31
120	860	760	8	332.08	1980.93