Supplementary file

Supreme tensile properties in precipitation-hardened 316L stainless steel fabricated through powder cold-consolidation and annealing

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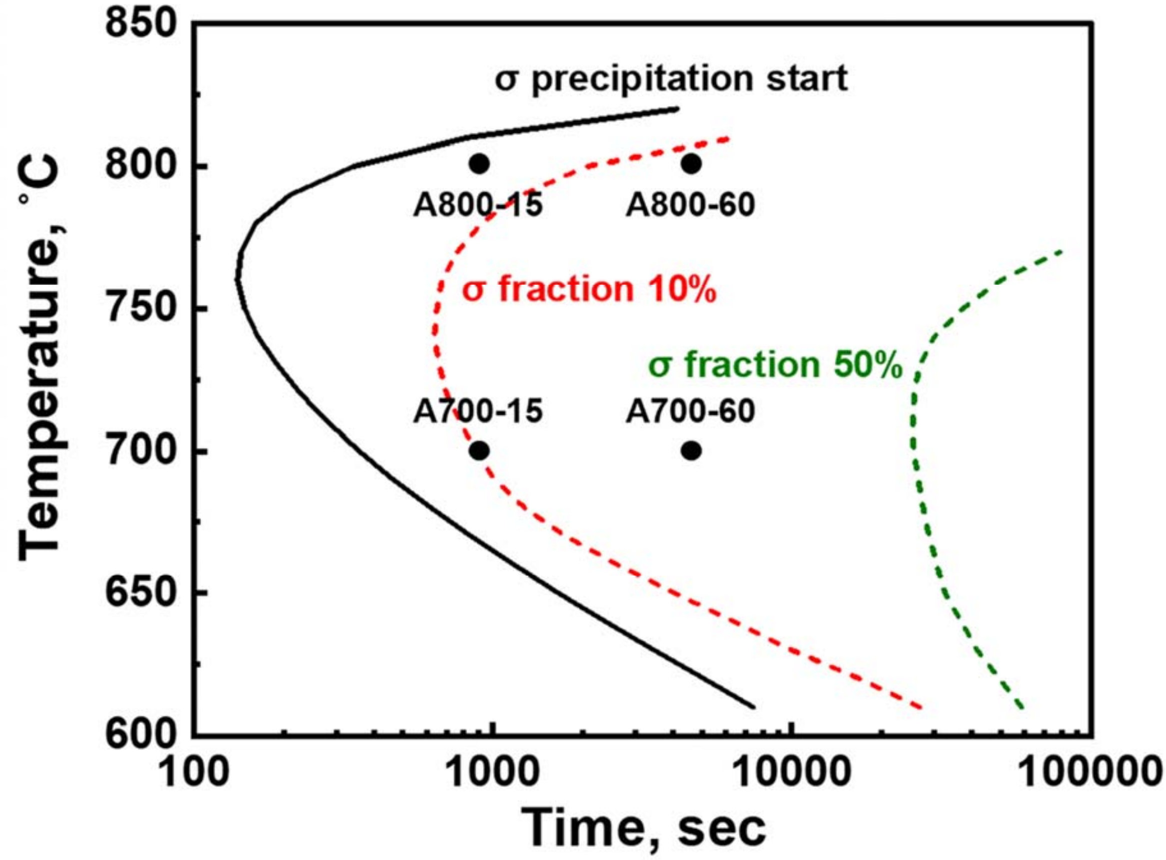

Figure S1. The time-temperature-transformation (TTT) curves of the 316L stainless steel, calculated by ThermoCalC software.

Table S1. Comparison of room temperature tensile properties of 316L stainless steel fabricated by different PM method.

Process	YS (MPa)	UTS (MPa)	T. El (%)	U. El (%)	Reference
AS-HPT	1850±29	1889±42	15.8±0.4	3.6±0.5	present
A715	1260±11	1260±7	28.5±1.2	1.7±0.3	present
A760	995±8	1085±15	44.8±0.5	25.0±1.7	present
A815	843±15	957±9	45.1±1.4	27.9±1.9	present
A860	688±13	818±17	68.8±1.8	35.6±2.5	present
Wrought	170	485	40	40	[1]
Wrought	1385	1630	6	-	[2]
Wrought	1330	1550	8	-	[2]
Wrought	1120	1250	9	-	[2]
Wrought	960	1055	17	-	[2]
Wrought	540	840	48	-	[2]
Wrought	530	835	50	-	[2]
Wrought	1080	1175	8	-	[2]
Wrought	1075	1175	14	-	[2]
Wrought	910	1025	19	-	[2]
Wrought	900	1025	21	-	[2]
Wrought	450	760	43	-	[2]
Wrought	450	745	51	-	[2]
Wrought	580	770	46	-	[3]
Wrought	1290	1450	6	-	[3]
Wrought	1290	1380	3.2	-	[3]
Wrought	1670	1920	2.9	-	[3]
Wrought	1280	1610	3.2	-	[3]
Wrought	1190	1400	5	-	[3]
Wrought	250	580	50	-	[3]
Wrought	191	543	74	55	[4]
Wrought	237	592	50	39	[4]
Wrought	405	715	41	31	[4]
Wrought	553	801	34	25	[4]
Wrought	319	666	86	71	[5]
Wrought	352	681	81	66	[5]
Wrought	396	695	73	58	[5]

Wrought	397	714	68	53	[5]
Wrought	945	1080	10.5	-	[6]
Wrought	875	960	11.5	-	[6]
Wrought	720	820	20	-	[6]
Wrought	725	810	4.5	-	[6]
Wrought	700	765	5	-	[6]
Wrought	560	630	9.5	-	[6]
Wrought	660	755	5	-	[6]
Wrought	640	685	4.5	-	[6]
Wrought	520	580	7	-	[6]
Wrought	585	645	5.5	-	[6]
Wrought	580	670	5.5	-	[6]
Wrought	475	540	6	-	[6]
Wrought	460	535	13	-	[6]
Wrought	430	520	10	-	[6]
Wrought	395	435	11.5	-	[6]
Conventional PM	191	287	5	5	[7]
Conventional PM	136	233	7	7	[7]
Conventional PM	540	540	22	22	[8]
Conventional PM	125	179	26	26	[9]
Conventional PM	151	231	53	55	[9]
Conventional PM	138	270	79	80	[9]
Conventional PM	168	281	64	65	[9]
PIM (MIM)	177	462	33	33	[10]
PIM (MIM)	258	517	25	25	[10]
MIM	541	541	44	44	[11]
MIM	527	527	43	43	[11]
MIM	534	534	56	56	[11]
MIM	536	536	54	54	[11]
MIM	268	268	14.5	14.5	[12]
MIM	319	319	18	18	[12]
MIM	410	410	21.8	21.8	[12]
SPS	336	966	42	40	[13]
SPS	329	996	43	42	[13]
SPS	343	988	41	40	[13]
SPS	329	904	34	33	[13]

SPS	322	960	46	44	[13]
DED	469	628	31	22	[14]
DED	530	670	34	25	[14]
DED	470	629	31	23	[15]
DED	458	652	16	15	[15]
DED	450	590	15	13	[16]
DED	450	620	20	17	[16]
DED	420	520	60	45	[17]
DED	445	558	50	42	[17]
PBF	562	609	27	25	[18]
PBF	530	681	32	22	[19]
PBF	554	666	45	30	[20]
PBF	550	690	57	40	[21]
PBF	510	610	18	18	[22]
PBF	500	572	42	34	[23]
PBF	550	700	58	30	[24]
PBF	521	617	56	39	[25]
PBF	617	725	35	25	[26]
PBF	536	627	48	32	[26]
PBF	550	675	44	22	[27]
PBF	480	565	66	33	[27]
PBF	511	621	20	17	[28]
PBF	430	510	12	10	[28]
PBF	558	670	53	35	[29]
PBF	497	600	62	50	[29]
PBF	513	580	59	40	[30]
Bulk-HPT/annealed	1735	1824	17.5	1.6	[31]
Bulk-HPT/annealed	2341	2352	2.1	1.5	[31]
Bulk-HPT/annealed	1832	1884	17.8	2.5	[32]
Bulk-HPT/annealed	1476	1533	15.2	2.1	[32]
Bulk-HPT/annealed	717	841	49.1	29.6	[32]
Bulk-HPT/annealed	628	799	46.2	31.5	[32]
Bulk-HPT/annealed	476	714	60.1	45.3	[32]
Bulk-HPT/annealed	340	629	77.5	58.6	[32]

References for supplementary file

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