“带材厚度对 $Fe_{75.2}Si_{13}B_8Cu_1Nb_{2.8}$ 纳米晶软磁合金磁畴结构和高频磁性能的影响”拓展补充材料

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Supplementary Material for

Effect of Ribbon Thickness on Magnetic Domain Structures and High-Frequency Magnetic Properties of $Fe_{75.2}Si_{13}B_8Cu_1Nb_{2.8}$ Nanocrystalline Soft Magnetic Alloy

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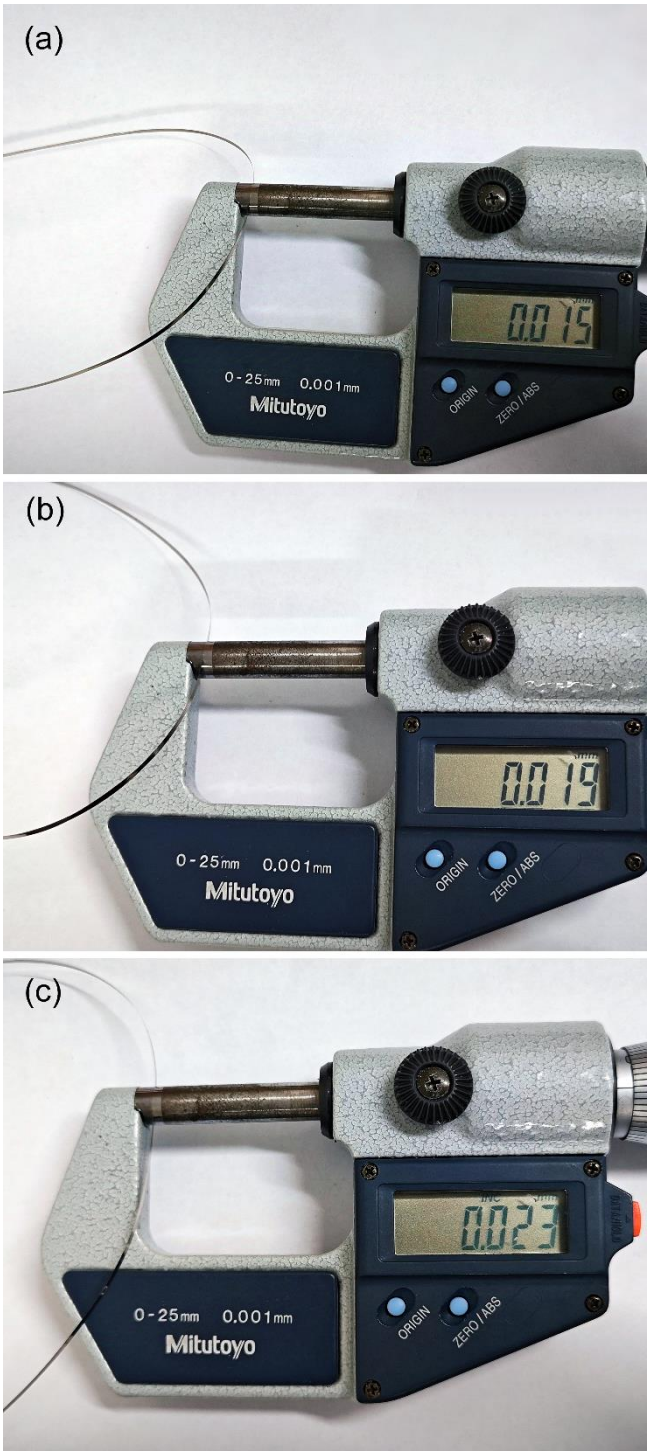
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附图 1. 使用螺旋测微器测量 $Fe_{75.2}Si_{13}B_8Cu_1Nb_{2.8}$ 合金带材的厚度

Fig.S1 Measurements on thicknesses of $Fe_{75.2}Si_{13}B_8Cu_1Nb_{2.8}$ alloy ribbons with a micrometer screw (*t*–ribbon thickness)

(a) t = 15 μm (b) t = 19 μm (c) t = 23 μm

附表 1 在不同频率下不同厚度 $Fe_{75.2}Si_{13}B_8Cu_1Nb_{2.8}$ 纳米晶带材的磁滞损耗(P_h)、涡流损耗(P_{ec})以及剩余损耗(P_{ex})

Table S1. Separated hysteresis losses (P_h), Eddy current losses (P_{ec}), and excess losses (P_{ex}) of $Fe_{75.2}Si_{13}B_8Cu_1Nb_{2.8}$ nanocrystalline alloy ribbons with different thicknesses at different frequencies (f)

($W \cdot kg^{-1}$)

f / kHz	T15 (t = 15 μm)			T19 (t = 19 μm)			T23 (t = 23 μm)		
	P_h	P_{ec}	P_{ex}	P_h	P_{ec}	P_{ex}	P_h	P_{ec}	P_{ex}
10	0.8	0.2	4.1	0.7	0.3	5.1	0.5	0.5	7.0
20	1.6	0.8	10.8	1.4	1.2	13.2	1.0	1.9	17.3
30	2.4	1.8	18.9	2.1	2.8	22.5	1.5	4.4	30.2
40	3.2	3.3	28.1	2.8	5.0	33.2	2.1	7.8	43.8
50	4.0	5.1	37.8	3.5	7.8	44.2	2.6	12.2	58.5
60	4.8	7.4	48.2	4.2	11.2	56.0	3.1	17.5	74.3
70	5.7	10.0	59.2	4.9	15.3	68.9	3.6	23.8	91.1
80	6.5	13.1	70.6	5.6	20.0	82.0	4.1	31.1	108.8
90	7.3	16.6	83.5	6.3	25.3	96.7	4.6	39.4	128.2
100	8.1	20.4	96.3	7.0	31.2	111.5	5.1	48.7	147.2
200	16.1	81.8	255.4	14.0	124.8	286.2	10.3	194.7	385.4
300	24.2	184.0	458.1	21.0	280.8	508.1	15.4	438.0	680.9
400	32.3	327.1	679.4	27.9	499.2	777.1	20.6	778.7	1006.2
500	40.4	511.2	950.6	34.9	779.7	1068.9	25.7	1216.4	1343.4