

Hafnium Nitride (HfN)												
Image (gf)	Vertice	Row (μm)	Column (μm)	l_1 (μm)	l_2 (μm)	Average diagonal length (μm)	HV (GP)	l_1 (μm)	l_2 (μm)	Average diagonal length (μm)	HV (GP)	Relative error in average diagonal length
1 of 2	Data obtained by algorithm for automatic detection and measurement of indentation in Vickers hardness testing images						Data obtained in the manual manner by an expert					
1 (10)	A	98.875	30.875	6.255	6.82367	6.539	4.33597785	6.325032	6.893706	6.609	4.24414	1.0647
	B	99.125	37.125									
	D	102.375	33.625									
	C	95.625	34.625									
2(10)	A	100.125	28.375	9	9.41409	9.207	2.18712419	9.012881	9.426967	9.220	2.180997	0.1402
	B	100.125	37.375									
	D	103.625	34.375									
	C	94.375	32.625									
3(10)	A	99.125	29.625	6.75463	6.42748	6.591	4.26782995	6.757408	6.43026	6.594	4.264163	0.0430
	B	99.375	36.375									
	D	102.125	32.375									
	C	95.875	33.875									
4(10)	A	99.125	29.625	7.26722	6.75	7.009	3.77396276	7.326204	6.808983	7.068	3.711646	0.8290
	B	99.625	36.875									
	D	102.125	32.875									
	C	95.375	32.875									
5(50)	A	106.875	48.875	16.5	17.5873	17.044	3.19107259	16.51512	17.6024	17.059	3.185553	0.0865
	B	106.875	65.375									
	D	115.625	57.375									
	C	98.125	55.625									
6(10)	A	80.875	56.125	5.7717	5.34439	5.558	6.00167736	5.822749	5.39544	5.609	5.892834	0.9109
	B	81.375	61.875									
	D	83.875	58.875									
	C	78.625	59.875									
7 (10)	A	74.875	38.875	11.275	11.1018	11.188	1.48116968	11.50012	11.32695	11.414	1.42321	1.9761
	B	75.625	50.125									
	D	81.625	44.125									
	C	70.625	45.625									
8 (10)	A	73.125	32.375	11.5109	10.6888	11.1	1.50474799	11.51846	10.69637	11.107	1.50274	0.0668
	B	73.625	43.875									
	D	78.375	36.625									
	C	67.875	38.625									
9 (50)	A	97.375	40.125	15	16.8412	15.921	3.65711864	15.06861	16.90978	15.989	3.625989	0.4265
	B	97.375	55.125									
	D	107.125	47.125									
	C	90.375	48.875									
10 (10)	A	95.625	52.375	8.01561	11.275	9.645	1.99299067	8.09683	11.35619	9.727	1.959727	0.8380
	B	96.125	60.375									
	D	100.125	56.125									
	C	88.875	56.875									

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2 of 2	Data obtained by algorithm for automatic detection and measurement of indentation in Vickers hardness testing images						Data obtained in the manual manner by an expert					
11 (10)	A	77.125	59.125	5.771698	5.70088	5.736	5.63497	5.79	5.72	5.758	5.5917	0.3842
	B	77.625	64.875									
	D	80.125	61.125									
	C	74.625	62.625									
12 (10)	A	86.625	58.125	5.771698	6.08276	5.927	5.27764	5.81	6.12	5.962	5.2158	0.5872
	B	87.125	63.875			0						
	D	90.125	60.625			0						
	C	84.125	61.625			0						
13 (50)	A	92.625	38.125	11.02554	12.0234	11.524	6.98029	11.03	12.03	11.532	6.971	0.0665
	B	93.375	49.125			0						
	D	98.875	43.375			0						
	C	86.875	44.125			0						
14 (10)	A	84.875	37.875	5.055937	5.34439	5.2	6.85651	5.12	5.41	5.262	6.6959	1.1781
	B	85.625	42.875			0						
	D	87.875	39.875			0						
	C	82.625	40.875			0						
15 (50)	A	97.625	21.125	17.86232	21.2832	19.563	2.42219	18.34	21.76	20.054	2.305	2.4493
	B	99.625	38.875			0						
	D	108.375	27.625			0						
	C	87.125	28.375			0						
											4.6654	
											Total sum =	11.0471
											Total relative error =	0.7365