

Table 1: The CIE chroma coordinates (L*a*b*), chroma (c*), and hue angle (h°) values of the prepared nano pigments compared with corresponding standard colors.

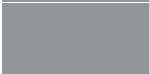
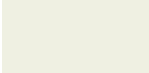
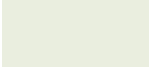
Pigments	CIE coordinates (L*a*b*)			ΔE^*	Chroma (c*)	Hue angle (h°)	Color	Analysis
	L*	a*	b*					
LWFO	62.77	19.34	19.79	-	27.67	45.66		Close but distinguishable
Terrazzo Tan	62.02	18.79	20.25	1.264	28	47		
Copper trail	62.45	20.44	18.11	4.352	27	42		Slightly Different
LWCuO	80.87	-3.29	24.39	-	24.61	97.67		Close but distinguishable
Pantone C	82.18	-3.5	24.07	1.454	24	98		
Soft green	81.01	-3.42	21.22	10.205	21	99		Different
LWCO	62.01	-0.69	-2.57	-	2.66	254.9		Distinguishable to the practiced eye
Cool Grey 8 U	61.49	-0.11	-2.17	0.98	2	267		
Steely gray	61.98	-2.01	-3.03	1.984	4	236		Close but distinguishable
LWZO	94.42	-2.57	7.39	-	7.83	109.2		Distinguishable to the practiced eye
Sail cloth / Washing line	94.47	-2.04	7.76	0.467	8	105		
Mental note	93.46	-3.46	7.29	1.762	8	115		Close but distinguishable

Table 2: The chroma parameters and color difference (ΔE^*) values of the prepared nano pigments after acid/alkali treatment.

Pigments	Treatment	CIE L*a*b*			C*	H*	ΔE^*
		L*	a*	b*			
LWO	Without	91.84	-3.6	6.9	7.79	117.6	-
	H ₂ O	92.63	-3.29	6.82	7.57	115.8	0.85
	HNO ₃	83.13	-1.52	38.7	38.73	92.25	33.04
	HCl	85.34	-6.19	36.8	37.32	99.54	30.71
	NaOH	93.55	-2.85	6.86	7.43	112.6	1.87
LWCuO	Without	80.87	-3.29	24.39	24.61	97.67	-
	H ₂ O	81.63	-3.32	23.95	24.18	97.9	0.88
	HNO ₃	82.96	-3.99	25.55	25.86	98.88	2.49
	HCl	81.9	-3.49	27.14	27.37	97.33	2.94
	NaOH	84.43	-3.27	20.29	20.55	99.16	5.43
LWCO	Without	62.01	-0.69	-2.57	2.66	254.9	-
	H ₂ O	63.14	-0.8	-2.49	2.62	252.2	1.14
	HNO ₃	65.3	-0.87	-1.91	2.1	245.5	3.36
	HCl	67.34	-2.55	1.9	3.18	143.3	7.20
	NaOH	66.95	-1.17	-2.48	2.74	244.7	4.96
LWZO	Without	94.42	-2.57	7.39	7.83	109.2	-
	H ₂ O	94.58	-2.5	7.04	7.47	109.6	0.39
	HNO ₃	91.78	-6.05	22.3	23.1	105.2	15.54
	HCl	91.32	-5.52	17.07	17.94	107.9	10.58
	NaOH	93.6	-2.48	7.63	8.02	108	0.86
LWFO	Without	62.77	19.34	19.79	27.67	45.66	-
	H ₂ O	63.09	19.49	19.62	27.66	45.19	0.39
	HNO ₃	62.47	19.92	20.39	28.51	45.66	0.89
	HCl	63.6	19	20.19	27.72	46.74	0.98
	NaOH	61.9	19.39	19.15	27.25	44.64	1.08

