

Supplementary Materials

Table S1. Description of target types in the panel of hand samples.

Class Acronym	Material	Description
Css	Cassiterite	Minerals
Chal	Chalcopyrite	
Mal	Malachite	
Mus	Muscovite	
Wlf	Wolframite	
Scl	Schorl	
Qtz_0	Quartz	Differently colored quartz fragments
Qtz_1		
Qtz_2		
Qtz_3		
Qtz_4		
Qtz_5		
Oxid	Oxidized	Surface with appearance of Iron oxide
Alter-1	Alteration	Hydrothermal alteration
Alter-2		
U-1	Unknown	Patches of consisting coloration in the PC composite of unknown material. Small grains of minerals can be observed
Smg	Small grains	Unidentified small grains with similar texture and color
Ref	Reference	WCS-MC-020 reference
White	White reference	Sphere Optics SG 3141 95%.
Tie	Tie	Ties to hold samples to the panel

Table S2. Accuracy metrics of all panel materials: LDA, SVM and RF classifications.

	LDA			SVM			RF		
	Producer's accuracy	User's accuracy	F1	Producer's accuracy	User's accuracy	F1	Producer's accuracy	User's accuracy	F1
Cassiterite	0.788	0.590	0.675	0.524	0.478	0.500	0.519	0.701	0.597
Chalcopyrite	0.871	0.450	0.593	0.833	0.588	0.690	0.613	0.528	0.567
Malachite	1.000	1.000	1.000	1.000	0.742	0.852	1.000	1.000	1.000
Muscovite	0.529	0.947	0.679	0.643	0.600	0.621	0.559	0.655	0.603
Quartz_0	0.863	1.000	0.926	0.894	0.868	0.881	0.849	0.816	0.832
Quartz_1	0.602	1.000	0.752	0.760	0.919	0.832	0.785	0.869	0.825
Quartz_2	1.000	0.627	0.771	0.966	0.838	0.898	0.942	0.903	0.922
Quartz_3	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Quartz_4	1.000	0.905	0.950	0.750	1.000	0.857	1.000	0.905	0.950
Quartz_5	0.966	0.878	0.920	0.986	0.922	0.953	1.000	0.937	0.967
Reference	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Wolframite	0.789	0.951	0.862	0.769	0.861	0.812	0.912	0.854	0.882
White	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.997	0.999
Ties	0.980	1.000	0.990	0.985	1.000	0.992	0.990	1.000	0.995
Unknown	0.939	0.596	0.729	0.808	0.840	0.824	0.818	0.730	0.771
Small grains	0.716	0.738	0.727	0.730	0.818	0.771	0.813	0.741	0.776
Oxidized_1	0.854	1.000	0.921	0.565	0.684	0.619	0.805	0.868	0.835
Oxidized_2	0.917	0.733	0.815	0.700	0.467	0.560	0.667	0.667	0.667
Oxidized muscovite	0.083	0.250	0.125	0.400	0.118	0.182	0.167	0.400	0.235
Oxidized_3	0.778	0.750	0.764	1.000	0.778	0.875	0.889	0.857	0.873
Schorl	1.000	0.917	0.957	0.778	0.583	0.667	0.000		