Supplementary Information

Analysis of Nanofluids Behavior in a PV-Thermal-Driven Organic Rankine Cycle with Cooling Capability

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Table S1. Properties of Nanofluids.

	Al_2O_3				
		Density (kg/m3)	**Specific Heat (J/Kg.K)**	**Thermal conductivity(W/m.K)**	
		3980	955	0.842	
	Volume Concentration (ϕ)				
	0%	**1%**	**5%**	**10%**	**20%**
K (kJ/ms °C)	0.589	0.6329983	0.8089915	1.028983	1.468966
Cp (kJ/kg °K)	4185	4060.05795	3625.166529	3193.980951	2573.321
μ (m2/s)	0.001108906	0.001108889	0.001108824	0.00110875	0.001109
ϱ (kg/m3)	999.1	1028.909	1148.145	1297.19	1595.28
	CuO				
		Density (kg/m3)	**Specific Heat (J/Kg.K)**	**Thermal conductivity(W/m.K)**	
		3600	2400	0.8501	
	Volume Concentration(ϕ)				
	0%	**1%**	**5%**	**10%**	**20%**
K (kJ/ms °C)	0.589	0.6329983	0.8089915	1.028983	1.468966
Cp (kJ/kg °K)	4185	4122.313983	3900.448415	3674.671932	3339.073
μ (m^2/s)	0.001108906	0.001108889	0.001108824	0.00110875	0.001109
ϱ (kg/m^3)	999.1	1025.109	1129.145	1259.19	1519.28
	Fe3O4 (50nm)				
		Density (kg/m3)	**Specific Heat (J/Kg.K)**	**Thermal conductivity(W/m.K)**	
		998.5	670	0.69907	
	Volume Concentration(ϕ)				
	0%	**1%**	**5%**	**10%**	**20%**
K (kJ/ms °C)	0.589	0.6329983	0.8089915	1.028983	1.468966
Cp (kJ/kg °K)	4185	4149.870898	4009.350271	3833.689992	3482.338
μ (m^2/s)	0.001108906	0.001108889	0.001108824	0.00110875	0.001109
ϱ (kg/m^3)	999.1	999.094	999.07	999.04	998.98
	SiO_2				
		Density (kg/m3)	**Specific Heat (J/Kg.K)**	**Thermal Conductivity (W/m.K)**	
		2220	730	0.68269	
	Volume Concentration(ϕ)				
	0%	**1%**	**5%**	**10%**	**20%**
K (kJ/ms °C)	0.589	0.6329983	0.8089915	1.028983	1.468966
Cp (kJ/kg °K)	4185	4109.156712	3823.252315	3500.896503	2951.151
μ (m^2/s)	0.001108906	0.001108889	0.001108824	0.00110875	0.001109
ϱ (kg/m^3)	999.1	1011.309	1060.145	1121.19	1243.28