

Table Appendix B1 Experimental data of thermal conductivity of nanofluids

Year	Reference	Based Fluid	Particles			Effective Thermal Conductivity (k_{eff}/k_{bf})	
			Material	Size (nm)	Volume Fraction (ϕ)		
1993	Masuda <i>et al.</i>	Water	Al ₂ O ₃	13	0.01309580	1.11032	
					0.02757780	-	1.22172
					0.04381350		1.33095
1996	Eastman <i>et al.</i>	Water	Al ₂ O ₃	33	0.01006780	1.05911	
					0.02003390		1.11240
					0.03000000	-	1.17151
					0.03996610		1.22674
					0.05000000		1.28585
1999	Pak & Cho	Water	Al ₂ O ₃	13	0.01309580	1.10158	
					0.02757780	-	1.21517
					0.04381350		1.32112
1999	Lee <i>et al.</i>	Water	Al ₂ O ₃	38.4	0.010229	1.02006	
					0.020487	-	1.04955
					0.030798		1.07002
					0.041031		1.09008
					0.044249	1.09991	

Table Appendix B1 (Continued)

Year	Reference	Based Fluid	Particles			Effective Thermal Conductivity (k_{eff}/k_{bf})		
			Material	Size (nm)	Volume Fraction (ϕ)		Temperature (K)	
2003	Das <i>et al.</i>	Water	Al ₂ O ₃	38.4	0.00997501	294	1.02209	
					0.01995090		1.05042	
					0.02992540		1.06903	
					0.03990090	309	1.09459	
					0.00998145		1.06792	
					0.01995800		1.10111	
					0.03000270	324	1.11903	
					0.03991010		1.15987	
					0.00998681		1.10611	
					0.01996390	324	1.14278	
					0.02993980		1.17112	
					0.03992160		1.24181	
							294.0264	1.02198
							299.0411	1.04471
						0.01	304.0557	1.05238
							308.9824	1.06759
		313.9971	1.08713					
		318.9238	1.09568					
		323.8504	1.10770					

Table Appendix B1 (Continued)

Year	Reference	Based Fluid	Particles				Effective Thermal Conductivity (k_{eff}/k_{bf})
			Material	Size (nm)	Volume Fraction (ϕ)	Temperature (K)	
						294.0264	1.09408
						299.0411	1.11392
						303.8798	1.12913
					0.04	308.8944	1.15881
						313.9091	1.19457
						318.8358	1.22107
						323.7625	1.24293
						293.9691	1.08665
						303.9278	1.09861
2005	Chon <i>et al.</i>	Water	Al ₂ O ₃	11	0.01	313.8866	1.11454
						323.9897	1.12749
						333.9485	1.15737
						343.9072	1.14940
2005	Chon <i>et al.</i>	Water	Al ₂ O ₃	47	0.01	293.9691	1.02689
						303.9278	1.03984
						313.8866	1.05279
						323.8454	1.06972
						333.9485	1.09462
						343.7629	1.10359

Table Appendix B1 (Continued)

Year	Reference	Based Fluid	Particles				Effective Thermal Conductivity (k_{eff}/k_{bf})
			Material	Size (nm)	Volume Fraction (ϕ)	Temperature (K)	
2005	Chon <i>et al.</i>	Water	Al ₂ O ₃	150	0.01	293.9691	1.00896
						303.9278	1.01494
						313.8866	1.02291
						323.8454	1.04681
						333.9485	1.04781
						343.7629	1.07968
2005	Chon <i>et al.</i>	Water	Al ₂ O ₃	47	0.04	293.9691	1.08367
						303.9278	1.11554
						313.8866	1.16434
						323.9897	1.19124
						333.9485	1.24004
						343.7629	1.28984
1999	Lee <i>et al.</i>	Ethylene Glycol	Al ₂ O ₃	38.4	0.01000000	1.02575	
					0.02001740	1.05149	
					0.02996520	1.09394	
					0.04005220	1.11968	
					0.05000000	1.18509	

Table Appendix B1 (Continued)

Year	Reference	Based Fluid	Particles				Effective Thermal Conductivity (k_{eff}/k_{bf})
			Material	Size (nm)	Volume Fraction (ϕ)	Temperature (K)	
2001	Eastman <i>et al.</i>	Ethylene Glycol	Al ₂ O ₃	35	0.01000000	-	1.02992
					0.02001740		1.05984
					0.02996520		1.11133
					0.04005220		1.13360
					0.05000000		1.17883
2002	Xie <i>et al.</i>	Ethylene Glycol	Al ₂ O ₃	-	0.01702610	-	1.09602
					0.03504350		1.20109
					0.05006960		1.29294
					0.00993220		1.11509
					0.01996610		1.23269
1997	Eastman <i>et al.</i>	Water	CuO	-	0.02993220	-	1.35184
					0.03996610		1.46634
					0.05000000		1.58859
1999	Lee <i>et al.</i>	Water	CuO	23.6	0.0100000	-	1.03926
					0.0149492		1.05783
					0.0199661		1.07485
					0.0249831		1.09342
					0.0349492		1.12747
					0.0400282		1.22475

Table Appendix B1 (Continued)

Year	Reference	Based Fluid	Particles			Effective Thermal Conductivity (k_{eff}/k_{bf})	
			Material	Size (nm)	Volume Fraction (ϕ)		Temperature (K)
2003	Das <i>et al.</i>	Water	CuO	28.6	0.0100351	294	1.06445
					0.0199667		1.09950
					0.0298974		1.12222
					0.0399291		1.14083
					0.0100458	309	1.21294
					0.0199769		1.24114
					0.0299061		1.24265
					0.0400386		1.25372
					0.0100513	324	1.28820
					0.0200324		1.30819
					0.0299642		1.34597
					0.0399953		1.35568
						293.9822	1.06497
						298.8060	1.13749
						304.0310	1.15443
						308.8519	1.21446
	313.9945	1.23348					
	318.8875	1.24837					
	324.0356	1.29031					

Table Appendix B1 (Continued)

Year	Reference	Based Fluid	Particles			Effective Thermal Conductivity (k_{eff}/k_{bf})	
			Material	Size (nm)	Volume Fraction (ϕ)		Temperature (K)
						293.9998	1.13927
						298.9011	1.18887
						304.0485	1.22804
					0.04	308.9440	1.25334
						313.9996	1.25501
						318.8989	1.29628
						323.9690	1.35907
					0.00987996		1.05024
1999	Lee <i>et al.</i>	Ethylene Glycol	CuO	23.6	0.01958660	-	1.09066
					0.03049760		1.14090
					0.03961890		1.21080
2001	Eastman <i>et al.</i>	Ethylene Glycol	CuO	35	0.0100282	-	1.04899
					0.0199718		1.08889
					0.0300282		1.13939
1998	Pak & Cho	Water	TiO ₂	27	0.009925		1.03399
					0.020333		1.05569
					0.031504	-	1.07985
					0.043586		1.10769