

Analytical magnetostatic model for 2D arrays of interacting magnetic nanowires and nanotubes

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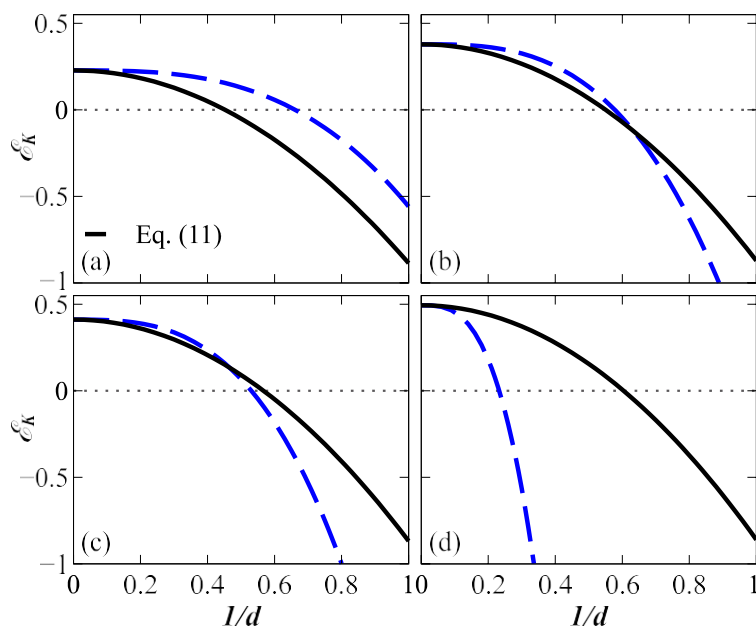


Figure S11. Reduced magnetic anisotropy energy E_k as a function of the reciprocal reduced center to center distance $1/d = \varphi/D$ for an array of NWs with aspect ratio (a) $t = 2$, (b) $t = 5$, (c) $t = 7$ and (d) $t = 100$, calculated using Eq. (11) [continuous line] and modifying the first term of Eq. (15) [dashed blue line].

Table 1. Coordinates (reduced center-to-center distance and aspect ratio) for the prediction of the easy axis orientation in magnetic NW arrays using Eq. (17) for those studies that report the EART in these systems.

Sample	$d=D/\varphi$	$\tau=h/\varphi$	Easy axis		Reference
			Reference	Model	
NiFe	1.44	55.55	Para	Para	1
	1.85	71.42	Para	Para	
	2.6	100	Perp	Perp	
CoFeB	1.35	5	Perp	Perp	2
	1.35	49.5	Perp	Perp	
	1.35	149.5	Perp	Perp	
	2.6	600	Perp	Perp	
	1.23	70.58	Perp	Perp	
	1.56	89.55	Para	Perp	
	1.75	3.33	Para	Perp	
	1.75	8.33	Perp	Perp	
Ni	Continued on next page				

Table 1 – continued from previous page

Sample	$d=D/\phi$	$\tau=h/\phi$	Easy axis		Reference
			Reference	Model	
	1.75	13.33	Para	Para	
	1.75	23.33	Para	Para	
	1.75	100	Para	Para	
	1.75	400	Para	Para	
	2.72	9.09	Para	Para	
	3	171.42	Para	Para	
Ni	1.71	3.5	Perp	Perp	4
	1.71	7	Perp	Perp	
	1.71	14	Perp	Perp	
	1.71	28	Perp	Para	
Co	1.61	15.38	Perp	Perp	5
	3	28.57	Para	Para	
Ni	1.5	20	Perp	Perp	6
	2.5	200	Para	Para	
NiFe	1.44	55.55	Perp	Perp	7
	1.75	41.66	Perp	Para	
	1.85	71.42	Para	Para	
	2.1	50	Para	Para	
	2.6	100	Para	Para	
Co	2.62	62.5	Para	Para	8
	1.5	142.85	Perp	Perp	
	2.1	200	Perp	Para	
	2.62	5	Para	Para	
	2.62	10	Para	Para	
	2.62	250	Para	Para	

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