Tables with the exemplary optimized capacitances

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1. Introduction

The tables shown below contain some exemplary values of capacitances, which were the results (outputs) from the Nelder-Mead optimization procedure. These values were optimized, that is, found by the algorithm during the maximization of a function $\eta = f(C)$, for each pair of parameters (fill factor of a coil ν and relative permeability μ_m) characterizing a metamaterial, at two frequencies of the magnetic field (25 kHz and 100 kHz).

2. Exemplary capacitances for a lower frequency magnetic meta-hose

Table S1. Optimized capacitances in (nF) resulting from the Nelder-Mead algorithm used for the design of a magnetic meta-hose, intended to operate in the external magnetic field at $f_r = 25$ kHz

Fill factor ν (-)	Relative permeability of the composite material μ_m (-)						
	1	25	50	75	100	125	150
0.15	10.436 nF	4.474 nF	2.707 nF	1.870 nF	1.429 nF	1.155 nF	0.972 nF
0.30	5.444 nF	2.302 nF	1.333 nF	0.933 nF	0.717 nF	0.582 nF	0.486 nF
0.45	3.110 nF	1.577 nF	0.930 nF	0.657 nF	0.505 nF	0.410 nF	0.346 nF
0.60	2.406 nF	1.235 nF	0.734 nF	0.518 nF	0.400 nF	0.325 nF	0.274 nF
0.75	2.046 nF	0.983 nF	0.624 nF	0.441 nF	0.341 nF	0.281 nF	0.234 nF

3. Exemplary capacitances for a higher frequency magnetic meta-hose

Table S2. Optimized capacitances in (nF) resulting from the Nelder-Mead algorithm used for the design of a magnetic meta-hose, intended to operate in the external magnetic field at f_r = 100 kHz

Fill factor ν (-)	Relative permeability of the composite material μ_m (-)						
	1	25	50	75	100	125	150
0.15	0.702 nF	0.302 nF	0.169 nF	0.117 nF	0.089 nF	0.072 nF	0.058 nF
0.30	0.293 nF	0.143 nF	0.083 nF	0.058 nF	0.043 nF	0.036 nF	0.031 nF
0.45	0.191 nF	0.098 nF	0.058 nF	0.041 nF	0.032 nF	0.026 nF	0.022 nF
0.60	0.147 nF	0.077 nF	0.046 nF	0.032 nF	0.025 nF	0.020 nF	0.017 nF
0.75	0.125 nF	0.065 nF	0.039 nF	0.028 nF	0.021 nF	0.017 nF	0.015 nF