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Table1:Optimized System Parameters for Frequency=150GHz and F_0=0.5 x10^5 V/m

ac mobility $\mu_{ac}(m^2/v.s)$	Lattice Temperature T_L (K)	Electron Temperature T_e (K)	Carrier concentration $N_{2D}(10^{15}m^{-2})$	Channel Width L_z (nm)
(InGa)As		(InGa)As	(InGa)As	(InGa)As
3.25	77	157	6.0	120
3.18	100	165	7.0	95
3.19	125	190	9.0	80
3.23	150	220	10.0	120
2.96	175	230	10.0	101
2.38	200	235	8.0	109
2.43	250	295	10.0	110
2.12	300	330	8.0	108

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Nano-MOS Array: Metallic Carbon Nanostructure Connected With Nanoscale Sio_2 Island Inside Insulated Alumina Nanochannel On Silicon Substrate

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A novel nano-MOS array consisting of metallic carbon nanostructure connected with nanoscale SiO_2 island inside insulated alumina nanochannel on silicon substrate was fabricated via Si-based porous anodic alumina (PAA) template. The electrical properties of the nano-MOS array were studied by means of current-voltage (I-V) and frequency dependent capacitance-voltage (C-V) tests. This structure is important to the application of carbon nanostructures and PAA template and has high potential in future nanoelectronics applications.

Keywords: Anodic aluminum oxide, Carbon nanostructures, MOS, Nanoelectronics.