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(54) Title: HEATING RESISTOR AND MANUFACTURING METHOD THEREOF

SAMPLE NO.	Ta	Si	O	N	Si/Ta	O+N(%)	RESISTIVITY (mohm.cm)
①	42.5	17.4	32.2	8.0	0.409	40.2	6.5
②	43.9	19.4	29.4	7.0	0.442	37.4	5.6
③	27.7	17.9	40	15	0.646	54.7	31

(57) Abstract

Forming a heating resistor which emits heat by electric current applied thereto, with non–metallic materials comprising at least tantalum (Ta), silicon (Si), oxygen (O), and nitrogen (N). In a case where such heating resistor has mole ratio Si/Ta of $0.35<Si/Ta<0.80$, oxygen mol% of 25 mol% to 45 mol%, and nitrogen mol% of 5 mol% to 25 mol%, the heating resistor shows resistivity equal to or greater than 4 mΩcm, peak angle 2 θ of X–ray diffraction strength is equal to or smaller than 37.5 degrees, and has resistance over 100,000,000 pulses. The heating resistor having the above characteristics is suitable for a print head of a thermal ink–jet printer. Further, the heating resistor shows stable but high resistivity, after the heating resistor is annealed.