

1 Experimental Results

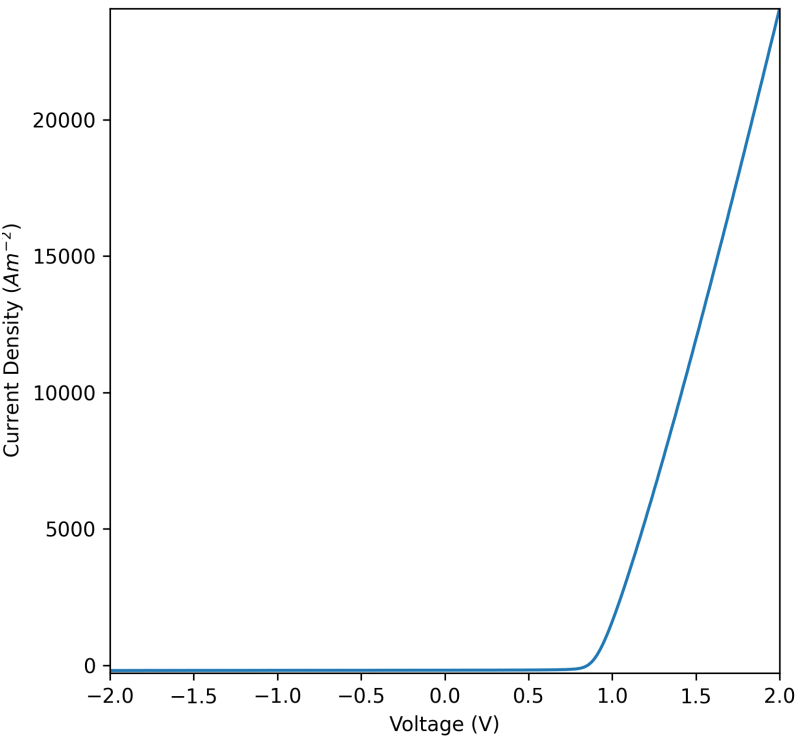


Figure 1: Experimental Input Characteristic

Table 1: Parameters calculable from input characteristic

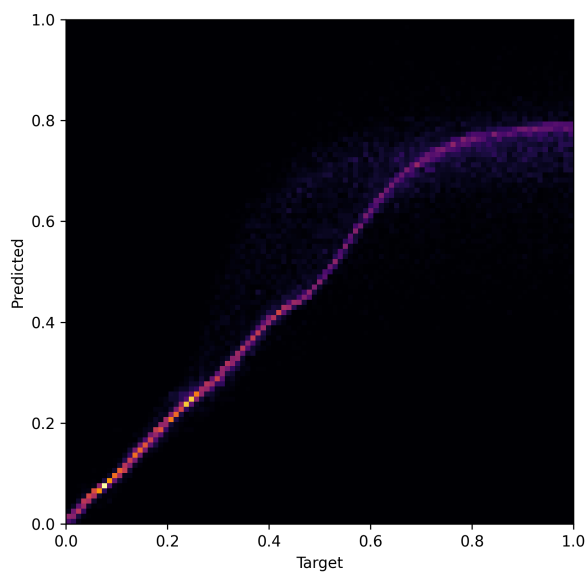
Parameter	Value	Unit
Jsc	176.250	Am^{-2}
Voc	0.850	V
FF	0.739	$a.u$
Pmax	110.700	Wm^{-2}
PCE	11.070	$Percent$

2 Machine Learning Parameters

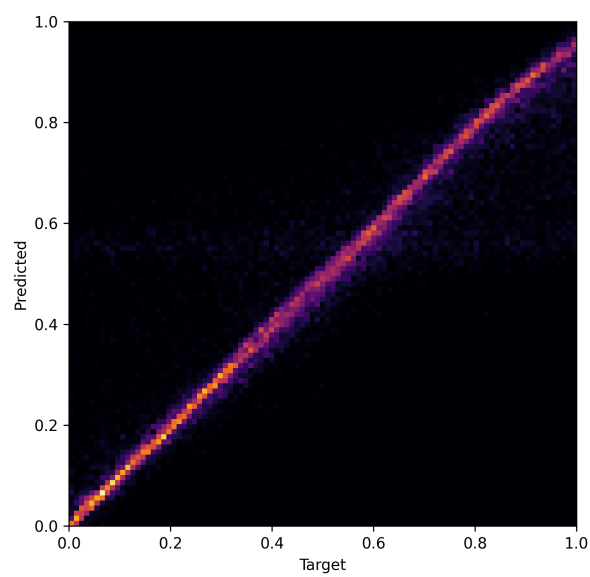
Table 2: Machine learning predictions by the single method

Parameters	Mean	Units	MAPE (%)
Shunt resistance	5.690	QLabel	11.433
Series resistance	4.098	QLabel	11.651
Current density at max power	-1.54e+02	QLabel	0.473
Voltage at max power	0.734	QLabel	3.592
Fill factor	0.696	QLabel	66.248
Power conversion efficiency (PCE)	11.122	QLabel	6.373
Max power	105.446	QLabel	13.486
V_{oc}	0.855	QLabel	3.484
J_{sc}	-1.78e+02	QLabel	226.941
light 1 0 R voc	1.15e+27	Not Found	68.007
light 1 0 k voc	-4.33e+05	Not Found	5.403
Total carriers (n+p)/2 at Voc	1.62e+23	QLabel	21.973
Average mobility as J_{sc}	5.08e-07	QLabel	7.768
Average mobility at P_{max}	6.62e-07	QLabel	6.990
Average mobility at V_{oc}	9.54e-07	QLabel	6.821
Recombination time constant at Voc	6.69e-04	QLabel	12.358
	5.08e-04	QLabel	9.542

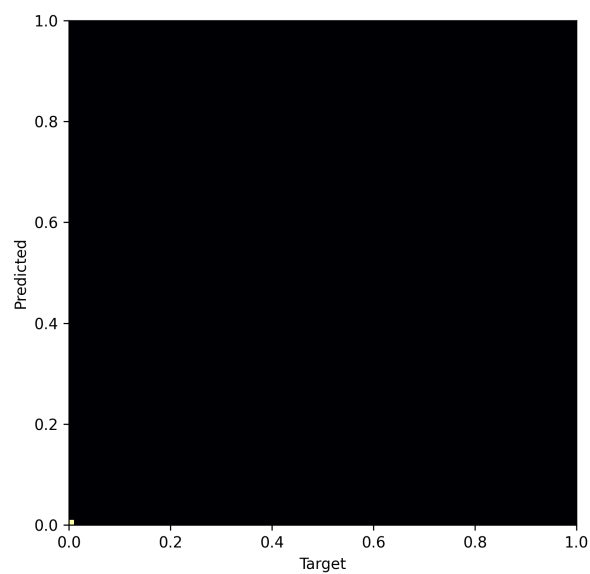
2.1 Shunt resistance



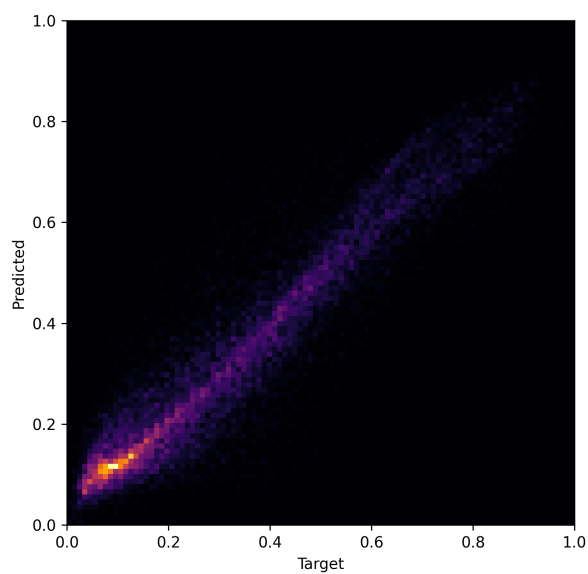
2.2 Series resistance



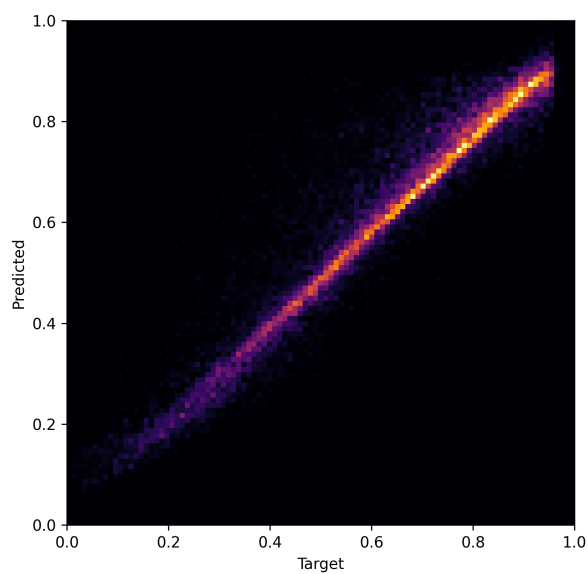
2.3 Current density at max power



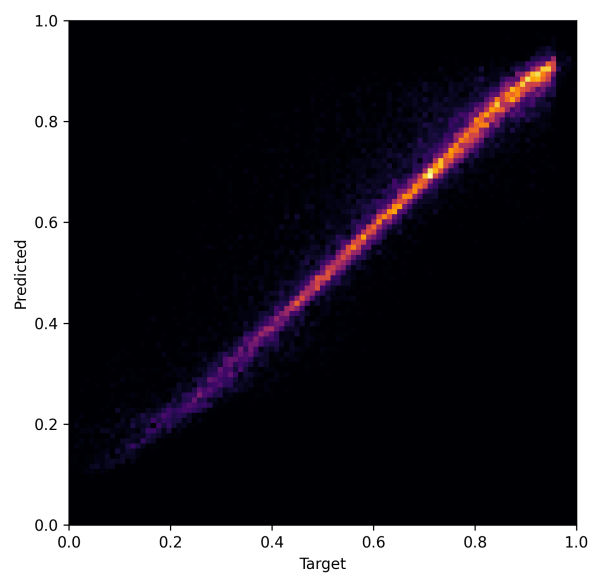
2.4 Voltage at max power



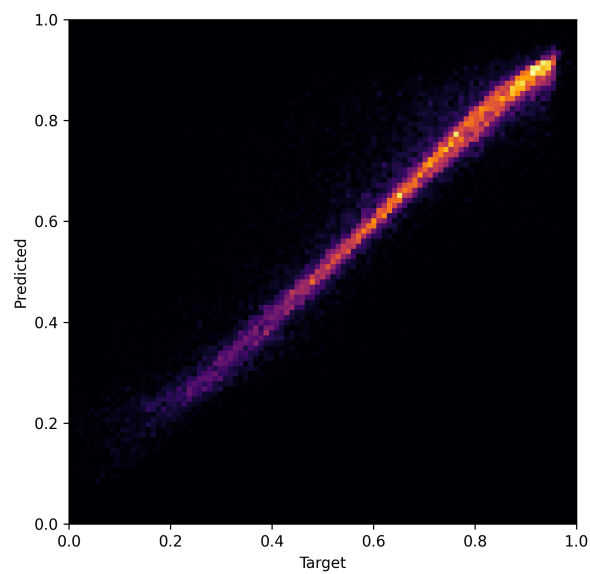
2.5 Fill factor



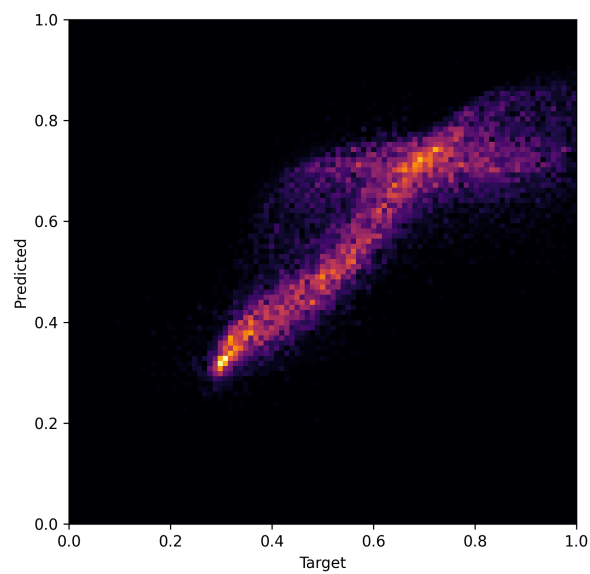
2.6 Power conversion efficiency (PCE)



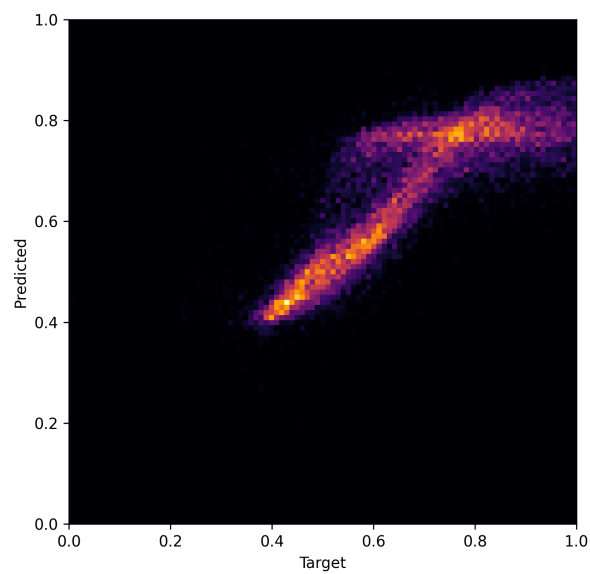
2.7 Max power



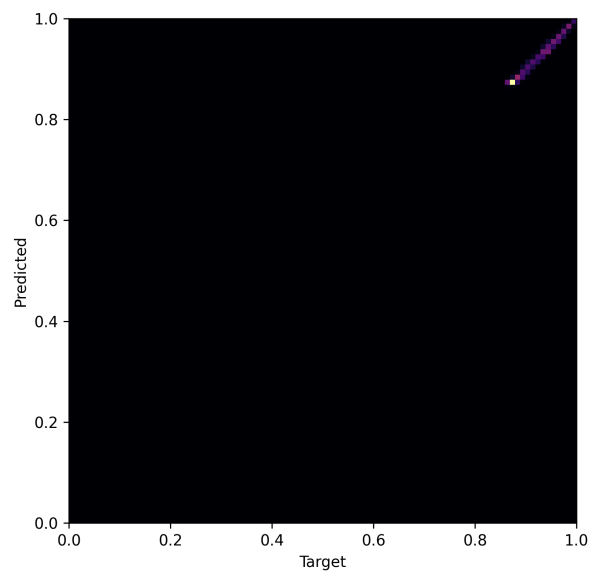
2.8 V_{oc}



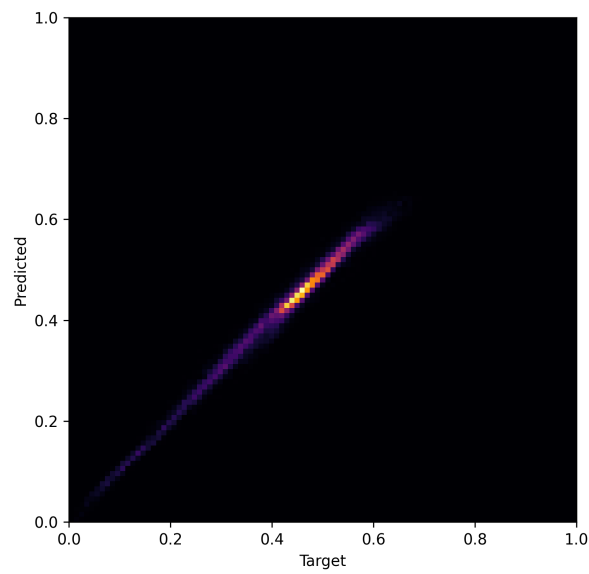
2.9 J_{sc}



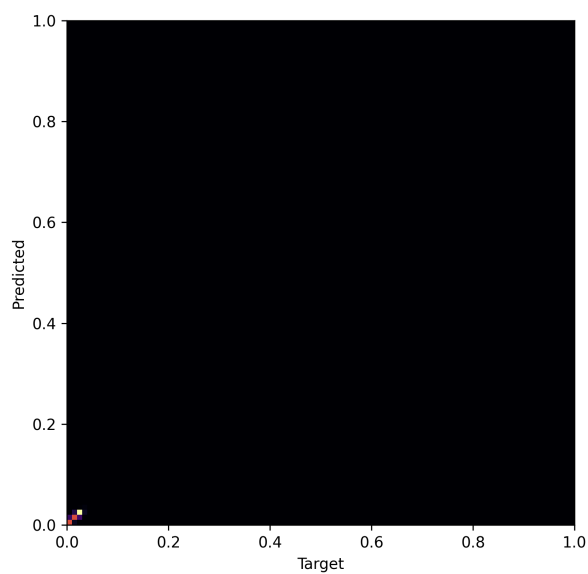
2.10 light 1 0 R voc



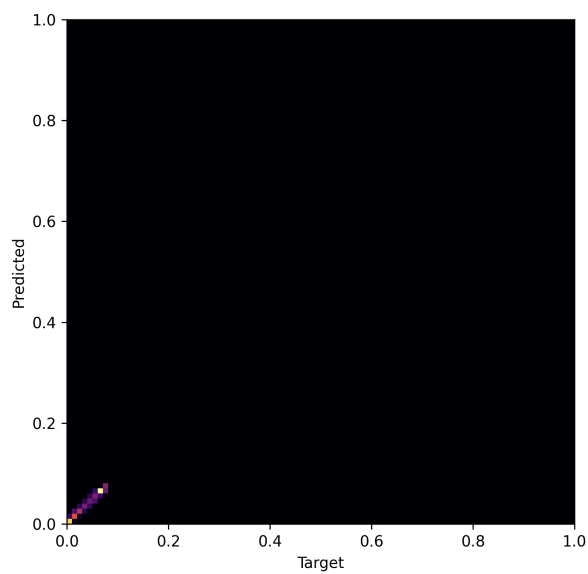
2.11 light 1 0 k voc



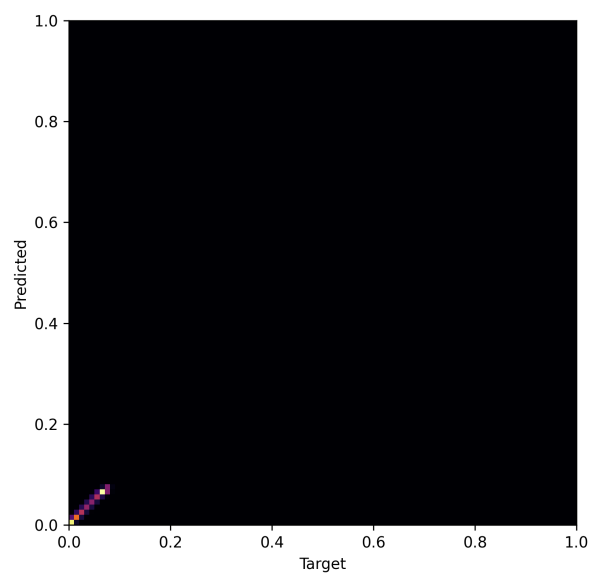
2.12 Total carriers $(n+p)/2$ at V_{oc}



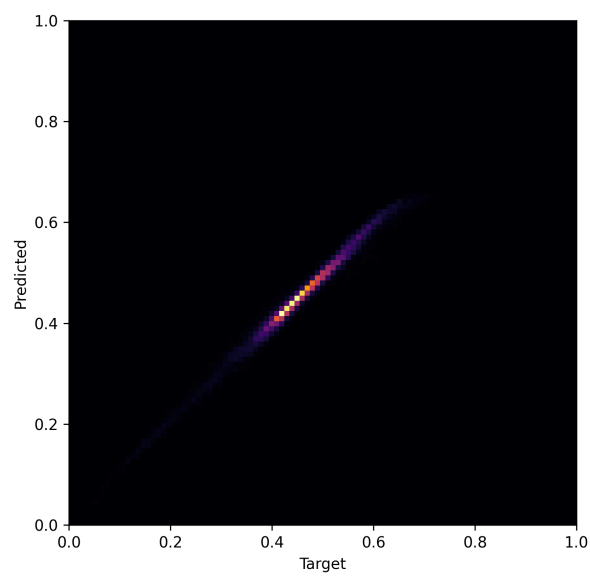
2.13 Average mobility as J_{sc}



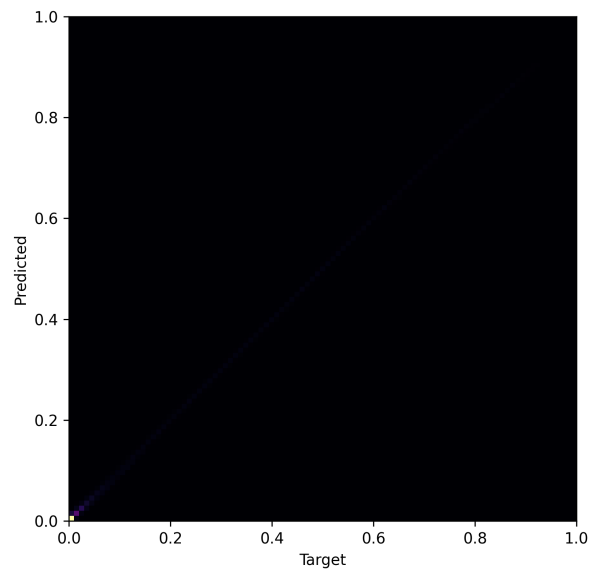
2.14 Average mobility at P_{max}



2.15 Average mobility at V_{oc}



2.16 Recombination time constant at Voc



2.17

