

Supplementary

Table S1. 30 available features

	Features	savgol_filter used	Index
Charge/discharge capacity	Charge specific capacity		(1)
	Discharge specific capacity		(2)
	Coulombic efficiency		(3)
	Capacity difference		(4)
Charge/discharge energy	The integral of capacity and voltage charging curve		(5)
	The integral of capacity and voltage discharging curve		(6)
	Charge energy / discharge energy		(7)
	Charge energy - discharge energy		(8)
Voltage	Average charging voltage		(9)
	Average discharging voltage		(10)
	Take the voltage data at the beginning and end when step model is “standing” at charging step.		(11-12)
	Take the voltage data at the beginning and end when step model is “standing” at discharging step.		(13-14)
Difference between charging and discharging curve	Minimum	√	(15)
	Maximum	√	(16)
	Mean	√	(17)
	Variance	√	(18)
	Skewness	√	(19)

	Kurtosis	√	(20)
Locally convex coordinates	Locally convex coordinates of voltage and capacity charging curve	√	(21-24)
of voltage and capacity curve	Locally convex coordinates of voltage and capacity discharging curve	√	(25-28)
Charge/discharge time	Charging time		(29)
	Discharging time		(30)