Supplementary Materials

Photothermal conversion enhanced $LiMn_2O_4$ Pouch Cell performance for low-temperature resistance: a theoretical study

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Table S1: Comprehensive parameter of LIB

Parameter	Al Collector	Cathode	Separator	Anode	Cu Collector	Description
L (mm)	0.1	0.3	0.07	0.3	0.1	Electrode thickness
r(m)		$2*10^{-6}$		$5*10^{-6}$		Particle size
$i_{0ref}(A/m^2)$		0.70		0.96		Reference current density
epss		0.5		0.45		Solid volume fraction
cs_0		21735		1200		Initial substance solubility
csmax(mol/m^3)		22860		31507		Max substance concentration
α		0.5		0.5		Transfer coefficient
epsl		0.4		0.4		liquid volume fraction
k(m/s)		$4.8*10^{-10}$		$4.4*10^{-10}$		rate constant

Table S2: Subscripts

p	Positive	l	liquid phase
n	Negative	re	reversible
sep	Separator	eq	Equilibrium
a	Anode	cell	Battery
c	Cathode	irre	Irreversible
ref	Reference	amb	Ambient
eff	Effective value	e	Electrolyte phase
ext	external	J_h	Joule heat
s	solid phase	rad	radiant

Figure S1: *Panasonic UF653445ST commercial battery curves*