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Sample Data (GP powder)

OSAKA Titanium technologies Co., Ltd.

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1) Metal Impurity Concentration

ICP -AES

(ppmw)

Lot. No.	Fe	Ni	Cu	Cr	Al	Mg	Ti	Zn	Zr	Co	Mn
GP140109-1	12	<1	2	<1	12	3	<1	<1	320	<1	29

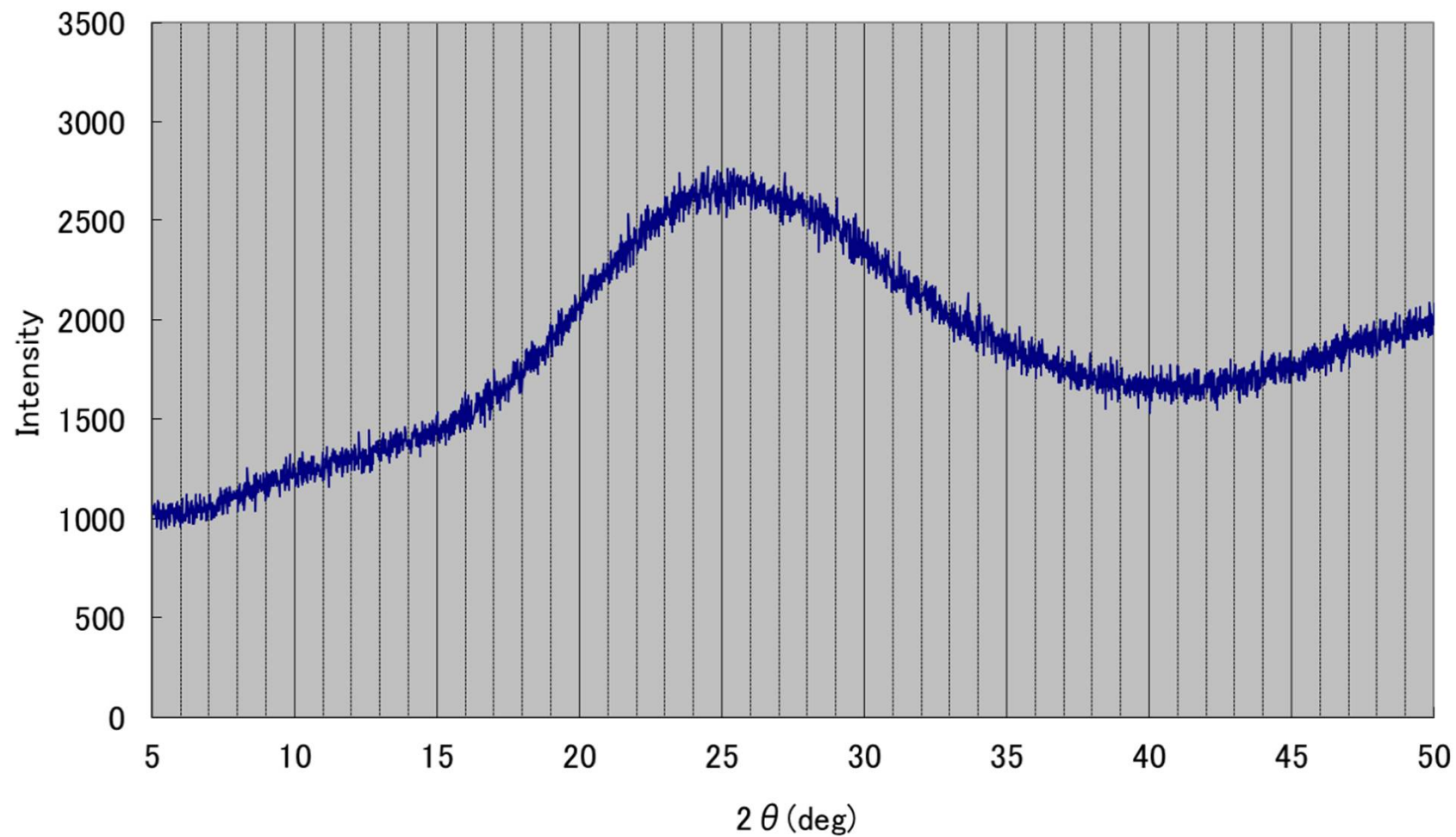
2) BET specific surface area

Lot. No.	BET
GP140109-1	14.8 m ² /g

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3) XRD

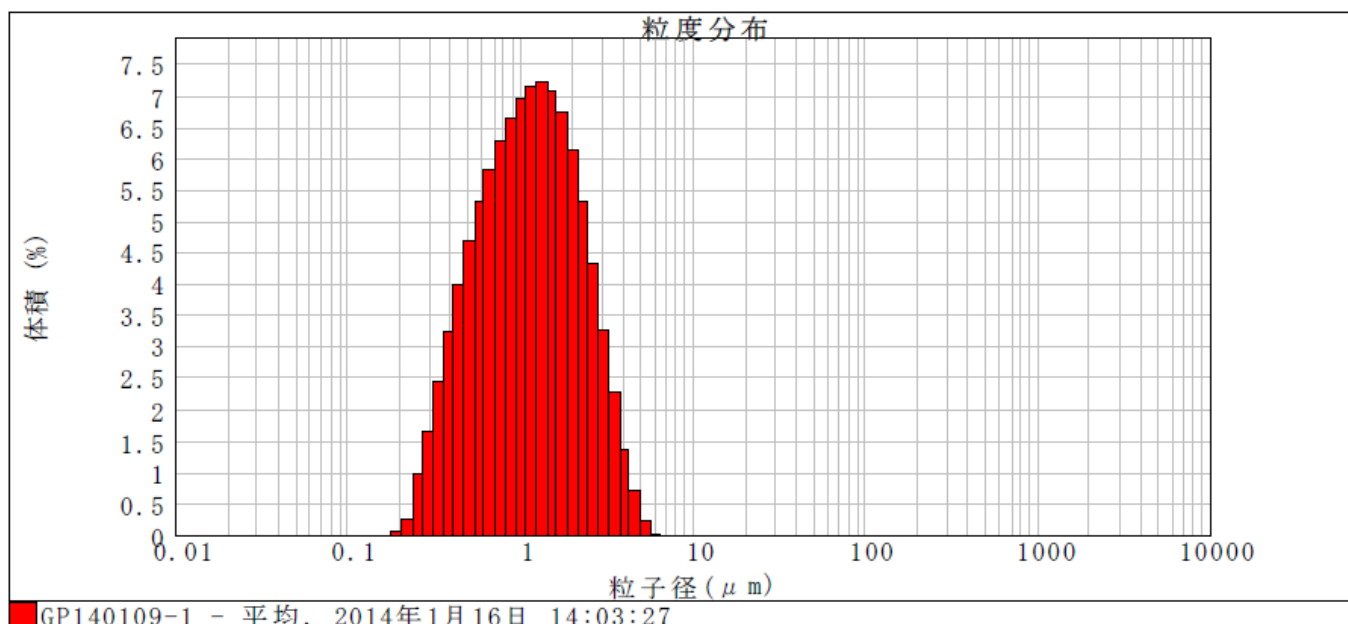
GP140109-1



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5) Particle Size Distribution

Malvern mastersizer 2000



GP140109-1

lot No.	D10	D50	D90	D99	$\leq 2 \mu\text{m}$
GP140109-1	0.4 μm	1.1 μm	2.7 μm	4.3 μm	78.6%

Battery measurement condition

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Battery condition

anode: SiO:KB:PI = 80:5:15
 Cu foil(35 μ m), ϕ 11mm
 cathod: Li, ϕ 13mm
 cell: 2032 coin cell
 electrolyte: 1mol/L LiPF6
 EC:DEC=1:1
 anode density: 3.5~4.5 mg/cm²

Measurement condition

	charge	discharge
1st	CC-CV 0.1C 5mV-50 μ A	CC 0.1C 1.5V
2nd	CC-CV 0.3C 5mV-50 μ A	CC 0.3C 1.5V
3rd	CC-CV 0.5C 5mV-50 μ A	CC 0.5C 1.5V

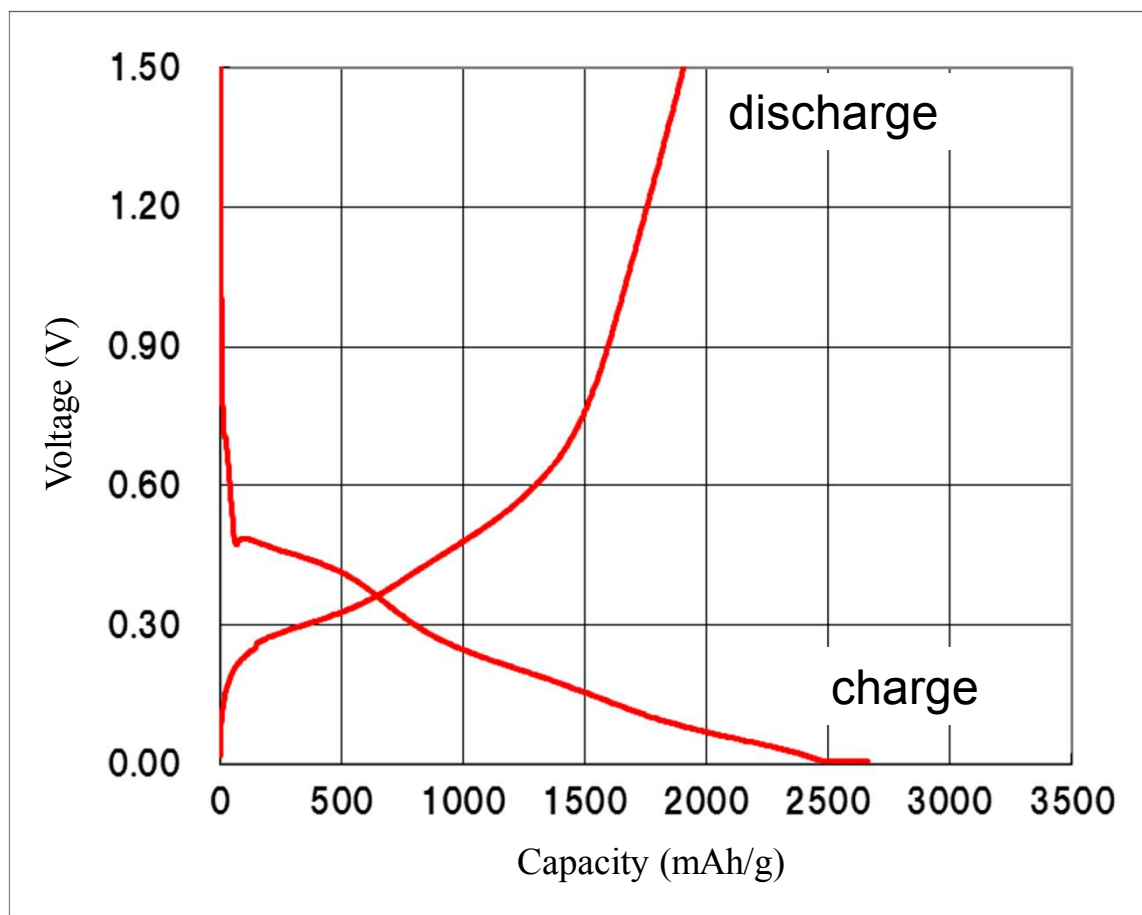
approximate capacity of SiO = 1500 mAh/g

Sample name	First chage capacity [mAh/g]	First discharge capacity [mAh/g]	First CE [%]	Rate characteristic* [%]	remarks
GP140109-1	2660	1905	71.6%	89.7%	No coat

* 3cycle discharge capacity / 1 cycle discharge capacity

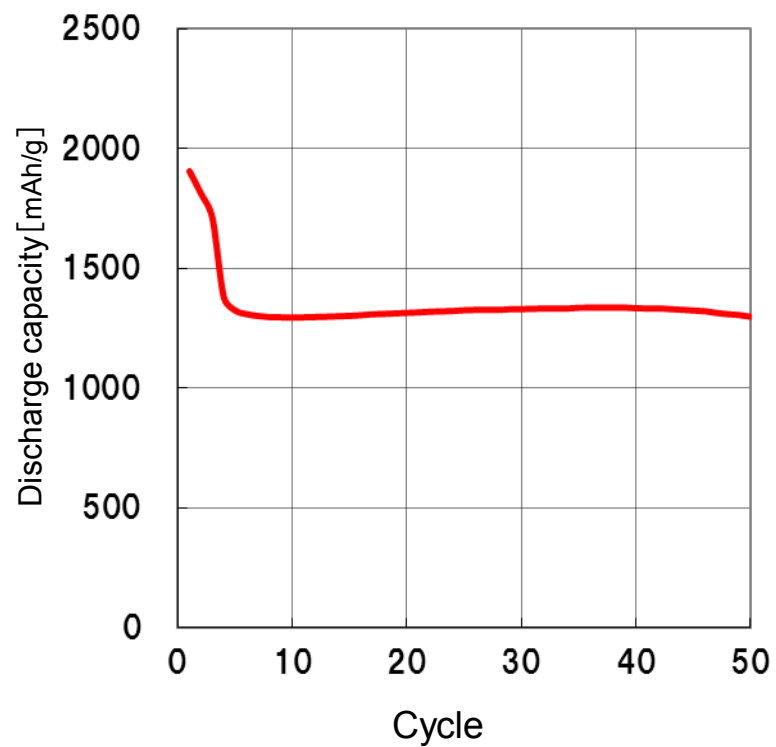
First charge-discharge curve

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Discharge capacity



Retention rate

