Week 10: Assignment 10

The due date for submitting this assignment has passed.

Due on 2021-10-06, 23:59 IST.

As per our records you have not submitted this assignment.

1) The theoretical specific capacity of Sulphur is: *2 points*

(a) 1170 mAh/g

(b) 235 mAh/g

(c) 1675 mAh/g

a
b
c

No, the answer is incorrect.
Score: 0
Accepted Answers:
c

2) Among the following discharge products of Li-S battery, which one is/are soluble in the organic electrolyte? *2 points*

(a) Li_2S_4

(b) Li_2S

(c) Li_2S_8

a
b
c

No, the answer is incorrect.
Score: 0
Accepted Answers:
a
c

3) In Li-S battery, the well-known shuttle effect is originated due to the: *2 points*

(a) Dissolution of long chain polysulphides in the electrolyte

(b) Instability of the electrolyte

(c) Delamination of the electrode

a
b
c

No, the answer is incorrect.
Score: 0
Accepted Answers:
a

4) Why $LiNO_3$ additive is used in the electrolyte of Li-S cell? *2 points*

(a) To improve the ionic conductivity of electrolyte

(b) To improve the electrolyte stability

(c) To suppress the shuttle effect

a
b
c

No, the answer is incorrect.
Score: 0
Accepted Answers:
c

5) Among the following salts, which one is commonly used in electrolyte for Li-S cell? *2 points*

(a) LITFSI

(b) $LiPF_6$

(c) $LiClO_4$

a
b
c

No, the answer is incorrect.
Score: 0
Accepted Answers:
a

6) Lack of voltage rise during charging in a Li-S battery is an indication of *2 points*

(a) Poor electronic conductivity of the positive electrode

(b) Li dendrite formation

(c) Redox shuttle effect

a
b
c

No, the answer is incorrect.
Score: 0
Accepted Answers:
c

7) Which solvent is commonly used to prepare electrolyte for Li-S battery? *2 points*

(a) PC

(b) EC: DMC (3:7 wt%)

(c) DOL:DME (1:1 V/V)

a
b
c

No, the answer is incorrect.
Score: 0
Accepted Answers:
c

8) TiO_2 is added in the cathode composition of Li-S battery *2 points*

(a) To improve the electronic conductivity of the cathode composite

(b) To buffer the volumetric stresses generated during cycling

(c) To absorb the polysulphides and reduce their dissolution in electrolyte

a
b
c

No, the answer is incorrect.
Score: 0
Accepted Answers:
c

9) Which approach would result a homogeneous Sulphur distribution in a mesoporous carbonaceous host? *2 points*

(a) Melt impregnation of Sulphur

(b) Ball milling the Sulphur and carbonaceous host together

(c) Wet-chemical synthesis of Sulphur in presence of the carbonaceous host

a
b
c

No, the answer is incorrect.
Score: 0
Accepted Answers:
a

10) Among the following binders which can reduce the polysulphide dissolution in Li-S battery? *2 points*

(a) Polyvinylidene difluoride

(b) Poly acrylic acid

(c) Polyacrylonitrile

a
b
c

No, the answer is incorrect.
Score: 0
Accepted Answers:
b
c