CLAIMS

Claim 1: A negative electrode structure (100) applied to an aluminum battery (101), comprising:

a first metal layer (110), having a first reduction ability, wherein the first metal layer (110) is a metal foil comprising zinc or titanium; and

a second metal layer (120), having a second reduction ability, wherein the second metal layer (120) comprises aluminum and is disposed on the first metal layer (110), and the first reduction ability is higher than the second reduction ability, such that the second metal layer (120) is corroded and dissolved in the aluminum battery (101).

Claim 2: The negative electrode structure (100) according to claim 1, wherein a reaction potential of the first metal layer (110) in a chloroaluminate ionic liquid is at least 0.5 volts higher than an oxidation potential of the second metal layer (120).

Claim 3: The negative electrode structure (100) according to claim 1, wherein an oxidation potential range of the first metal layer (110) in a chloroaluminate ionic liquid is between 0.5 volts and 1 volt.

Claim 4: The negative electrode structure (100) according to claim 1, wherein an oxidation potential range of the second metal layer (120) in a chloroaluminate ionic liquid is between -0.1 volts and 0.1 volts.

Claim 5: The negative electrode structure (100) according to claim 1, wherein a thickness

range of the first metal layer (110) is between 10 μm and 100 μm.

Claim 6: The negative electrode structure (100) according to claim 1, wherein a thickness range of the second metal layer (120) is between 0.5 μm and 50 μm.

Claim 7: The negative electrode structure (100) according to claim 1, wherein the first metal layer (110) is in direct contact with the second metal layer (120).

Claim 8: The negative electrode structure (100) according to claim 1, wherein electron migration occurs on a contact surface between the first metal layer (110) and the second metal layer (120).