STRONGEST

OXIDANT at the

CATHODE

reacts preferentially

STRONGEST

REDUCTANT at the

ANODE

reacts preferentially

The half-reaction with the highest E° value is always positive

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Electrons always go from

Reductant to

Anode via external circuit to

Cathode to

Oxidant

In the internal circuit (e.g. salt bridge or electrolyte), **cations always flow to the cathode** (and anions always flow to the anode).

Never double the E° values!

ANODE

Oxidation

CATHODE

Reduction

Spontaneous

galvanic

discharge

Non-spontaneous

electrolytic recharge

Electrochemical series doesn't predict **rate of reaction**

Choosing an electrode

1. **Use the metal in the half-equation**
2. **No metal? Use platinum (or graphite)**

Platinum electrodes are used because they're:

1. **Inert**
2. **Conductors**
3. **Good catalysts for the redox reaction**

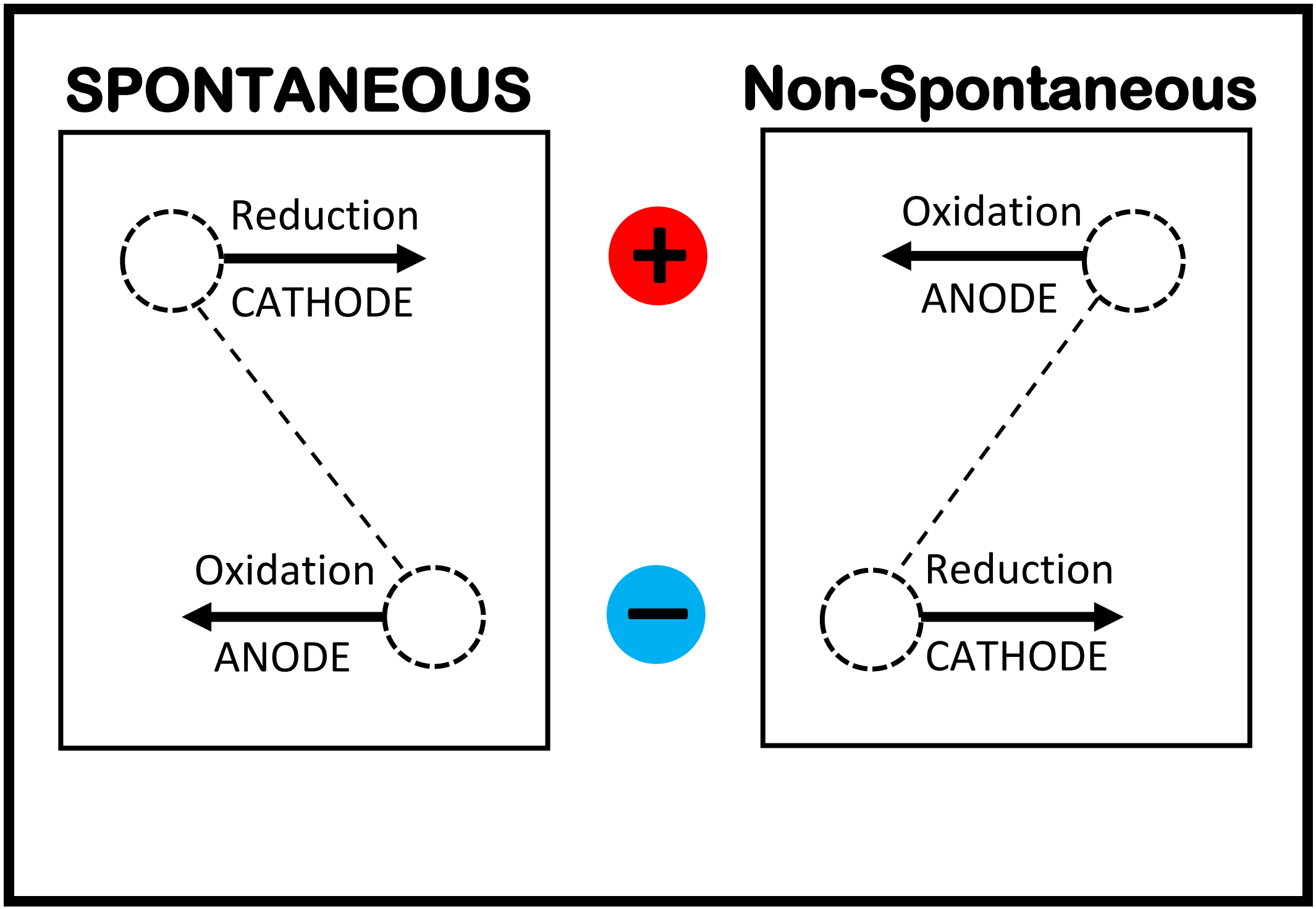
The cathode is sometimes negative

Internal circuits include:

1. Electrolytes
2. Salt bridges

Both complete the circuit by allowing the flow of ions

Cations flow to the Cathode


SPONTANEOUS
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