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Anodic behavior of uranium in AlCl_3 -1-ethyl-3-methyl-imidazolium chloride ionic liquid

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Highlights

- Anodic reaction mechanism of uranium in ionic liquid was investigated.
- The composition and the influence of viscous layer on anodic process were discussed.
- By considering the effects of oxide films, an anodic reaction model was developed.

Abstract

The oxidation state of metals unambiguously affects its anodic behavior in ionic liquid. We systematically investigated the anodic behavior of uranium with different surface oxidation states by electrochemical measurements, spectroscopic methods and surface analysis techniques. In the anodic process, metal uranium can be oxidized to U^{3+} . The corresponding products accumulated on the metal/ILs interface will form a viscous layer. The anodic behavior of uranium is also

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