RadChem 2014



Contribution ID: 158

Type: Poster

neptunium extraction behavior in the plutonium purification process

Thursday, 15 May 2014 17:30 (1h 15m)

In order to control Np path-way in plutonium purification process, the extraction behavior of Np(IV) and Np(V) were invastigated with experiment and numerical simulation.

19%-42% Np can be extracted into organic phase in the co-extraction unit while using 1-3mol/L nitric acid as scrubbing reagent, if Np(V) was added into feed solution, because of the oxidation of Np(V) to Np(VI) prompted by nitrous acid. Most of Np(V) is not oxidated timely at short residence time if using centrifugal contactor and leads Np goes into raffinate. On the contrary, above 90% Np can be extracted into organic phase if Np(IV) was added into the feed solution. At this time, however Np(IV) is accumulated obviously at scruubing stage when the nitric acid concentration of scrubbing reagent is 1.5mol/L.

Primary author: Mr YE, GuoAn (China Inetitute of Atomic Energy , under CNNC(China Nation Nuclear Corporation0)

Co-author: Mr ZHANG, Hu (China Institute of Atomic Energy)

Presenter: Mr YE, GuoAn (China Inetitute of Atomic Energy , under CNNC(China Nation Nuclear Corporation0)

Session Classification: Poster Session - Chemistry of Nuclear Fuel Cycle / 1st ASGARD International Workshop

Track Classification: Chemistry of Nuclear Fuel Cycle / 1st ASGARD International Workshop