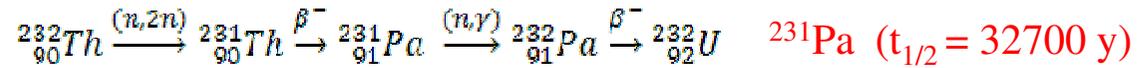
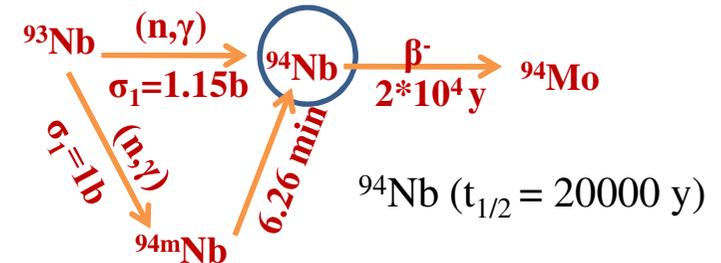


Studies on Sorption of ^{231}Pa and ^{94}Nb on oxides

- ^{231}Pa is acting as breeder material of ^{232}U , daughter product of it causes strong activity during Thorium spent fuel processing



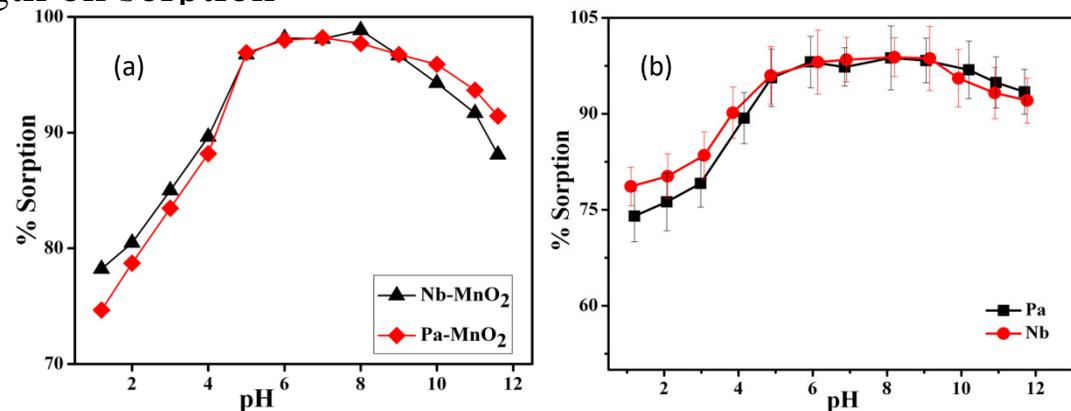
- ^{231}Pa (alpha emitter): half-life and Radio toxicity comparable to ^{239}Pu
- Nb a chemical analog of Pa
- ^{94}Nb produced in Zr-Nb pressure tube (PT) of PHWR
- Discharged Zr-Nb PT contains high ^{94}Nb activity (10^4R/h)
- Facing difficulty in handling of these discharged PT



- Knowledge of aqueous chemistry of Pa and Nb is important for Physico-chemical behaviour in waste matrix and natural environment

Sorption study of ^{231}Pa and ^{94}Nb on aquatic colloids

1. Sorption study of Nb and Pa on hydrous colloidal silica, iron oxides & manganese dioxide
2. The effect of various chemical parameter like pH, ionic strength, humic acid were studied
3. Effect of temperature & ionic strength on sorption
4. Sorption mechanism study: EXAFS



Figures: Sorption of Nb and Pa on (a) manganese dioxide; (b) silica

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