

Supplementary Information

Table 1: Specifications and Instrumental Operating Conditions of ICP-AES

Instrumental specification	
List name instrumental model and manufacturer	ARCOSFHS12, ARCOS, Germany
Optical design	Paschen-Runge mounting, Circular design
Focal length	750 mm
Grating	Holographic
Groove density	1800 grooves/mm (1), 3600 grooves/mm (2)
Wave length range	130-800 nm
Entrance slit width	15 microns
Resolution (FWHM)	0.01 nm from 130-450 nm 0.02 nm from 450-800 nm
Thermal regulation	Controlled to $30 \pm 1^{\circ}\text{C}$
Frequency	27.12 MHz
Pump	Dual channel peristaltic pump
Detector	Linear arrays of CCD (3648 pixels/array)
Nebulizer	Cross flow
ICP-torch	Demountable, radial viewing
Operating Condition	
Coolant flow	16 L/min
Auxiliary flow	0.5 L/min
Total time of Measurement	26 s
Pump speed	28 Rpm
RF power out put	1.1 kW
Input power	230 V AC

Table 2: Characterization of Simulated High Level Waste solution of Research Reactor origin

Metal ion	Conc. (mg L ⁻¹)	Metal ion	Conc. (mg L ⁻¹)	Metal ion	Conc. (mg L ⁻¹)	Metal ion	Conc. (mg L ⁻¹)
Sr	50	Ru	75	Na	5000	Gd	5
Y	15	Rh	50	Ce	100	Dy	5
Rb	10	Pd	20	Pr	50	Cr	400
Zr	5	Ag	5	Nd	200	Mn	500
Nb	0.1	Cd	5	Sm	50	Fe	1500
Mo	200	La	100	Eu	5	Ni	300
Ba	100						