		SPHERE		MARIOS				MARINE	
		mini-pin #1 top	**mini-pin #2** bottom	**mini-pin #1** top	**mini-pin #2**	**mini-pin #3**	**mini-pin #4** bottom	**mini-pin #1** top	**mini-pin #2** bottom
fuel	**project**	FAIRFUELS		FAIRFUELS				PELGRIMM	
	recycling mode-fuel concept	homogeneous-MADF		heterogeneous-MABB				heterogeneous-MABB	
	composition	(U, Pu, 3%Am)O2		(U, 15%Am)O2				(U, 13%Am)O2	
	fabrication	sol-gel process		powder metallurgy				sol-gel process	
	type of fuel	spherepac	pellet	pellet				spherepac	pellet
	geometry	beads	sintered beads	disks				beads	sintered beads
	density	75,5 %TD	94 %TD	92,5 %TD	92,5 %TD	88 %TD	88 %TD	~ 67 % TD	94-95 % TD
irradiation	**project**	FAIRFUELS		FAIRFUELS				PELGRIMM	
	reactor	HFR		HFR				HFR	
	begining - end	august 2013-april 2015		march 2011-may 2012				january 2016-may 2017	
	duration	295 EFPD		304 EFPD				359 EFPD	
	power density (EOI)	~ 300 W/cm		412 W/cc	542 W/cc	492 W/cc	364 W/cc	~ 55-70 W/cm *	
	burn-up (EOI)	~ 5 %at		1,14 %at	1,57 %at	1,53 %at	1,11 %at		
	temperature	~ 2300°C	<1800°C	990 °C	1370 °C	1180 °C	980 °C	<1000°C*	<1000°C*
PIE	**project**	PELGRIMM		PELGRIMM				**NOT PLANNED**	
NDE	**neutronoraphies**	fuel restructuring	small cracks		cracks	cracks			
	gamma spectrometry (scan)								
	puncturing : gaz released fraction	~ 90% Xe-Kr ~ 100% He	~ 90% Xe-Kr ~ 100% He	~ 10-20 % Xe-Kr ~ 100% He	~ 80-90 % Xe-Kr ~ 100% He	~ 45-50 % Xe-Kr ~ 100% He	~ 10-20 % Xe-Kr ~ 100% He		
ED	**number of fragments**			1 to 5	1 to 2	6 to 14	1 to 2		
	geometric density variation			not significant			not significant		
	hydrostatic density variation			not significant			~7% densification		
	optical macro/microscopy								
	SEM, XRD								
	EPMA, SIMS								

* to be confirmed after irradiation

Table 3 : Summary of SPHERE, MARIOS and MARINE fuel features, irradiation conditions and PIE results