

## SESSION II

### CHAIRMAN: C. MADIC

The field of hydrometallurgical processes continues to be very active.

- The MA partitioning at JNC comprises an improved version of the PUREX process and the TRUEX process for extraction and separation of the trivalent MAs from the high active raffinate issued from the PUREX process.
- In the four-group partitioning process at JAERI, the first active test of the process has been performed successfully in the BECKY hot-cell facility in NUCEF (Tokai-mura).
- The work in the field of partitioning in Europe is carried out within the European research programme “NEWPART” and at the CEA.
- A two-step partitioning process is under study within the NEWPART programme co-ordinated by the CEA. The first step is the co-extraction of the trivalent MAs and the trivalent lanthanide (Ln(III)) from a high active effluent issuing from the PUREX process using a malonamide extractant (DIAMEX process). The second step is the selective extraction of the trivalent MAs over the Ln(III). Important results include: (i) the first hot test of the DIAMEX process using centrifugal extractors at the ITU, Karlsruhe (Germany); (ii) the first inactive test of the DIAMEX process using an optimised malonamide extractant at the CEA/Marcoule; (iii) the first test using synthetic spiked solutions of an An(III)/Ln(III) group separation process using new aromatic diorganyldithiophosphinic acids at Jülich, Germany. For the first time successful separation performances were obtained for a feed with a high nitric acid concentration.
- The SESAME process at the CEA aims at Am/Cm or Am/Cm and Ln separations, and based on the extraction of oxidised form(s) of Am. Hot tests were carried out successfully at Marcoule in 1998.

The field of pyrometallurgy has recently been attracting more and more attention.

- The results of a study in CRIEPI were presented. The mass balance of TRUs during the implementation of the partitioning process was shown based on the distribution of MAs between a LiCl, KCl eutectic fused salt and fused metal.
- A new concept for nuclear fuel cycle in Russia was presented. The concept involves a molten salt reactor which is compatible with P&T strategy.
- In the Czech Republic, the experience of dry reprocessing based on fluoride salt volatility was accumulated in collaboration with the former SSSR. This can be useful for future strategies of nuclear waste management.

It can be concluded that the lectures presented in Session II reflected the important world-wide activities in the field of partitioning.