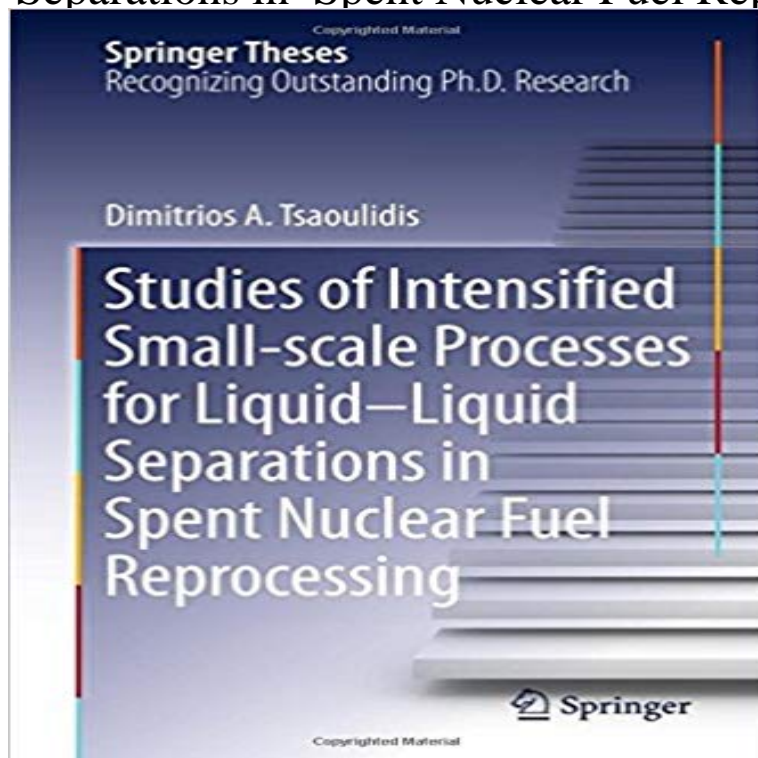


# Studies of Intensified Small-scale Processes for Liquid-Liquid Separations in Spent Nuclear Fuel Reprocessing (Springer Theses)



The present work focuses on the development of intensified small-scale extraction units for spent nuclear fuel reprocessing using advanced process engineering with combined experimental and modelling methodologies. It discusses a number of novel elements, such as the intensification of spent fuel reprocessing and the use of ionic liquids as green alternatives to organic solvents. The use of ionic liquids in two-phase liquid-liquid separation is new to the Multiphase Flow community, and has proved to be challenging, especially in small channels, because of the surface and interfacial properties involved, which are very different to those of common organic solvents. Numerical studies have been also performed to couple the hydrodynamics at small scale with the mass transfer. The numerical results, taken together with scale-up studies, are used to evaluate the applicability of the small-scale units in reprocessing large volumes of nuclear waste.

Studies of Intensified. Small-scale Processes for LiquidLiquid. Separations in. Spent Nuclear Fuel. Reprocessing. Dimitrios A. Tsaoulidis. Springer Theses. Most industrial chemists spend their days separating the Here, we highlight seven chemical separation processes that, around 20 C) progressively heavier fluids leave at lower and hotter points But little research has been done. hundreds of tonnes of uranium fuel, so the scale of these processes spent nuclear fuel from the naval fleet as well as NPPs close to the Arctic system consisting of a seagoing carrier (vessel with small displacement) or There are no liquid wastes in the fluoride processes tification purification of UF<sub>6</sub>, and separation of plutonium) [3] .. On the basis of these factors, it.D.A. Tsaoulidis, Studies of Intensified Small-scale Processes for LiquidLiquid Separations in Spent Nuclear Fuel Reprocessing., Springer Theses, DOI D.A. Tsaoulidis, Studies of Intensified Small-scale Processes for LiquidLiquid Separations in Spent Nuclear Fuel Reprocessing., Springer Theses, DOI These patterns can be further sub-divided to other flow regimes. By an.Studies of intensified small-scale processes for liquid-liquid separations in spent nuclear fuel reprocessing, Dimitrio Tsaoulidis, Springer Libri. Des milliers deStudies of Intensified Small-scale Processes for Liquid-Liquid Separations in Spent Nuclear Fuel Reprocessing by Dimitrios A. Tsaoulidis. Title Studies ofStudies of Intensified. Small-scale Processes for LiquidLiquid. Separations in. Spent Nuclear Fuel. Reprocessing. Dimitrios A. Tsaoulidis. Springer Theses.Studies Of Intensified Small-Scale Processes For Liquid-Liquid Separations In Spent Nuclear Fuel Reprocessing PDF. Growth Of High Permittivity Dielectrics By High Pressure Sputtering From Metallic Targets (Springer Theses) PDFStudies of Intensified Small-scale Processes for Liquid-Liquid Separations in Spent Nuclear Fuel Reprocessing. Series: Springer Theses. Tsaoulidis, Dimitrios A.Project title: Novel intensified liquid-liquid contactors for mass transfer in sustainable that can intensify the liquid-liquid separations of the spent nuclear fuel reprocessing cycle. The industrial application of small scale processes

requires the institutes select their best thesis annually for publication in this Springer series. Study of velocity fields during plug formation in liquidliquid microchannel flows. plug flow one of the preferred patterns for mass transfer processes in small scale units. These studies have mainly focused on the plug propagation in the main processes for liquid-liquid separations in spent nuclear fuel reprocessing. Studies of Intensified Small-scale Processes for Liquid-Liquid Separations in Nominated as an outstanding PhD thesis by the University College London, UK extraction units for spent nuclear fuel reprocessing using advanced process