Utilizing Distillation Technology on Zr/Hf Separation

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Zirconium has been an ideal material for use in nuclear reactor applications since a low absorption cross-section for neutrons. Since the same properties of hafnium tetrachloride and zirconium tetrachloride, the separation including the hafnium content less than 100ppm is really important for nuclear application materials. The purpose of this work is to develop a distillation method for reducing hafnium content as well as adapting the requirement of environmental issue. High-pressure method has been considered as a prominent technology for our mixture. This research was supported by a grant from the Fundamental R&D Program for Integrated Technology of Industrial Materials funded by the Ministry of Knowledge Economy, Republic of Korea.