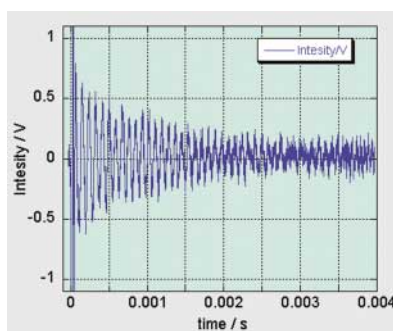


Development of Equipment for Continuous Flow Production of Spin-polarized Xenon Gas

Mineyuki HATTORI
 Photonics Research Institute
 e-mail :
 mhattori@ni.aist.go.jp
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The Photonics Research Institute, in cooperation with Toyoko Kagaku Co., Ltd. has succeeded in development of continuous flow-type equipment for spin-polarized xenon production based on the flow-type spin-polarized xenon production technology developed by AIST. This is the first equipment for continuous flow production of spin-polarized xenon, developed for prac-

tical use. This technology will lead to the development of medical equipment for instantaneous high precision diagnosis of the lung functions, and will represent a significant advance in technology for preventive diagnosis of brain infarction as it provides a highly accurate and fast imaging of the blood flow in the brain.

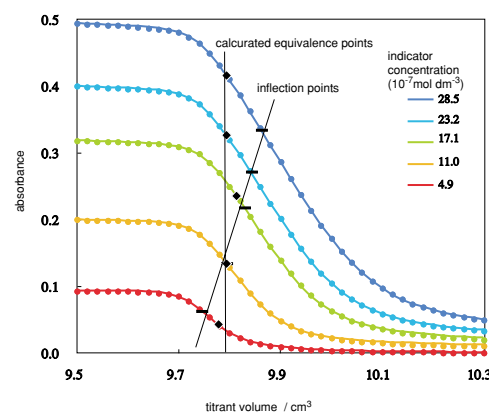


Continuous flow-type equipment for spin-polarized xenon production and NMR signal from spin-polarized xenon acquired by single pulse sequence

Accurate Determination of Cyanide Ions for Development of Standard Solution

Toshihiro SUZUKI
 Metrology Institute of Japan
 e-mail:
 toshihiro.suzuki@aist.go.jp
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In a nickel titration of cyanide ions using murexide as an indicator, an accurate equivalence point was determined by a nonlinear least-squares curve-fitting for a titration curve. This method was developed to establish a standard solution for cyanide ions. In a curve-fitting procedure, a theoretical titration curve was calculated, assuming that nickel ion formed only 1:4 complex with cyanide ions and formed only 1:1 complex with murexide. Results of the curve-fitting were reasonable at any pH and any indicator concentration studied.



Titration curves for nickel titration of cyanide ions