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[\[Image PDF \(780K\)\]](#) [\[References\]](#) [\[Errata\]](#)**Low-Frequency NMR of Laser-Polarized Xenon on a Liquid Surface**[Kiyoshi ISHIKAWA](#)¹⁾, [Hirohiko IMAI](#)¹⁾ and [Yoshihiro TAKAGI](#)¹⁾

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Abstract: We have optically polarized the nuclear spin of xenon atoms using a frequency-narrowed high-power laser-diode. The free-induction signals of polarized xenon in gas and liquid phases were measured in a magnetic field of less than 3 mT. The polarized xenon plays the role of a probe atom sensitive to the local environment. For example, we could detect the atoms, selectively, on or below the surface of liquid ethanol utilizing chemical shift imaging. The free-induction signal is so large that we can track the polarized xenon atoms dissolving into liquid ethanol through its surface. We also observed the spin-polarization of protons of ethanol transferred from polarized xenon.

Key Words: [High-power laser-diode](#), [Polarized xenon](#), [Surface NMR](#), [Real-time imaging](#), [Polarization transfer](#)

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