

令和 8 年度 第 1 回応用物理学会北海道支部研究会のお知らせ

下記講演会を開催いたしますので、多数ご参加下さいますようご案内申し上げます。

【 演題 】 Lithium Niobate Photonics: From Nonlinear Materials to Integrated Devices and Application

【 講師 】 Chang-Qing Xu 氏

(Department of Engineering Physics, McMaster University (Canada), Professor)

【 日時 】 2026 年 9 月 14 日(月) 15:00~16:30

【 会場 】 北海道大学工学部アカデミックランジ 3(B3-201)

【 主催 】 応用物理学コロキウム(北海道大学大学院工学研究院応用物理学部門),
エンレイソウの会(北海道大学量子トポロジー理工学教育研究センター)

【 共催 】 公益社団法人応用物理学会北海道支部

【 講演の要旨 】 Lithium niobate is a highly versatile photonic material that combines excellent optical transparency with strong nonlinear-optical, electro-optic, and piezoelectric properties. These characteristics have enabled a wide range of devices for generating, controlling, and converting light. In this seminar, the basic principles of nonlinear wavelength conversion will first be introduced in an accessible manner, followed by a brief review of the development of periodically poled lithium niobate (PPLN) and its importance in modern photonics.

Recent research from the Photonic Device Group at McMaster University will then be presented. The first part will focus on bulk-PPLN devices and subsystems developed for practical applications, including compact visible lasers for laser displays, mid-infrared sources and detectors for remote sensing, and wavelength-conversion technologies for free-space optical communications. The second part will discuss the rapid emergence of thin-film lithium niobate photonic integrated circuits. Recent progress in periodically poled thin-film lithium niobate waveguides and integrated devices for nonlinear and quantum photonics will be highlighted. The seminar will conclude with an overview of current research trends, technical challenges, and future opportunities for lithium-niobate photonics.

【 世話人 】 森田 隆二 (北海道大学大学院工学研究院応用物理学部門)

Tel: 011-706-6626, E-mail: morita@eng.hokudai.ac.jp
