

[Available Issues](#) | [Japanese](#)>> [Publisher Site](#)Author: [ADVANCED](#) | Volume Page
Keyword: | [TOP](#) > [Available Issues](#) > [Table of Contents](#) > [Abstract](#)

ONLINE ISSN : 1348-2246

PRINT ISSN : 0910-6340

Analytical Sciences

Vol. 26 (2010) , No. 1 p.25

[\[PDF \(2005K\)\]](#) [\[References\]](#) [\[Supplementary Materials\]](#)**One and Two-photon Excited Optogalvanic Spectra of Argon in the Wavelength Region of 735 – 850 nm**[Hideyuki MATSUTA](#)¹⁾, [Kazuaki WAGATSUMA](#)¹⁾ and [Kuniyuki KITAGAWA](#)²⁾1) *Institute for Materials Research, Tohoku University*2) *Ecotopia Science Institute, Nagoya University*

(Received November 9, 2009)

(Accepted November 28, 2009)

Optogalvanic (OG) spectra of argon in the visible to near-infrared spectral region between 735 and 850 nm were investigated using a Grimm-style glow-discharge tube, which has been widely used to obtain depth profiles of the elemental composition on various film-like samples. About 49 lines of one-photon and two-photon OG peaks were observed with a pulsed Ti:sapphire laser; these peaks were precisely assigned. Two-photon OG spectra of argon were easily observed without focusing the pulsed laser irradiation to more than 1 mJ. The excitation mechanisms of the observed argon OG spectra could be classified into 3 types: single-photon transition, two-photon transition, and two-photon stepwise transition. In addition, a pseudo-resonant effect was also found to be effective. The argon lines observed in this experiment are suitable as convenient calibration wavelength markers of pulsed tunable laser radiation.

[\[PDF \(2005K\)\]](#) [\[References\]](#) [\[Supplementary Materials\]](#)Download Meta of Article [\[Help\]](#)[RIS](#)[BibTeX](#)

To cite this article:

Hideyuki MATSUTA, Kazuaki WAGATSUMA and Kuniyuki KITAGAWA, *Anal. Sci.*,

doi:10.2116/analsci.26.25

JOI JST.JSTAGE/analsci/26.25

Copyright (c) 2010 by The Japan Society for Analytical Chemistry



[Japan Science and Technology Information Aggregator, Electronic](#)

