

## Surface-enhanced Raman scattering study of silver deposition on thin Alq<sub>3</sub> layers

G. Salvan  <sup>a</sup>, Y. Sakurai<sup>b</sup>, A. Yu. Kobitski<sup>a</sup>, R. Scholz<sup>a</sup>, S. Astilean<sup>c</sup>, T. U. Kampen<sup>a</sup>, D. R. T. Zahn<sup>a</sup>, H. Ishii<sup>b</sup> and K. Seki<sup>b</sup>

<sup>a</sup> Institut für Physik, Halbleiterphysik, Technische Universität Chemnitz, Reichenhainerstr 70/72, 09017 Chemnitz, Germany

<sup>b</sup> Department of Chemistry, Graduate School of Science, Nagoya University, Nagoya, Japan

<sup>c</sup> Babes Bolyai University, Cluj-Napoca, Romania

Available online 6 December 2001.


### Abstract

Surface-enhanced Raman scattering (SERS) spectroscopy is applied to study in situ the interface formation of silver on thin Alq<sub>3</sub> films. The changes in the frequencies of Alq<sub>3</sub> vibrational modes are moderate and their line-shape is preserved upon Ag deposition. Moreover, a good correspondence appears between the SERS and powder spectra and frequencies predicted by density functional calculations for the meridional isomer. The behaviour of Raman spectra indicates that no chemical interaction occurs between the Ag atoms and Alq<sub>3</sub> molecules.

**Author Keywords:** Alq<sub>3</sub>; Ag; Raman spectroscopy; SERS

**PACS classification codes:** 78.30 Jw; 78.66.Qn; 81.70Fy

-

 Corresponding author. Tel.: +49-371-531-3028; fax: +49-371-531-3060; email: [salvan@physik.tu-chemnitz.de](mailto:salvan@physik.tu-chemnitz.de)