**Photoluminescence Study of Selenium Doped GaSb Layers Grown by Liquid Phase Epitaxy**

Javier Olvera[1], J. Olvera-Cervantes[2] , M. Rojas-López[3], F. de Anda[4], E. Momox-Beristain[1], A. Olvera[2], *[1]Centro de Investigación en Dispositivos Semiconductores, BUAP, 72000, Puebla, Pue. México. [2]Universidad de Cádiz, Puerto Real, Cádiz, Spain. [3]Centro de Investigación en Biotecnología Aplicada, IPN, 72160, Tlaxcala, Tlax. México. [4]Instituto de Investigación en Comunicación Óptica, UASLP, 78100, San Luis Potosí, S.L.P., México.* E-mail: jolvera@siu.buap.mx

We analyzed the photoluminescence spectra of selenium-doped GaSb grown by liquid phase epitaxy at several temperatures from 10-160 K. The growth was performed using the same solution on GaSb substrates at 450 °C. The obtained layers showed only a small variation of carrier concentration. Photoluminescence measurements at 10 K showed a dominant transition near 777 meV associated to the residual acceptor. The dominant residual acceptor has been attributed to the native defects caused by antimony deficiency, usually due to the Ga antisite or Ga antisite defect in combination with the Ga vacancy. Also at this temperature, there are observed several bands associated to the presence of selenium shallow donors. As the measurement temperature increases, the photoluminescence band associated to the GaSb energy bandgap dominates the spectrum and its temperature dependence agrees with those for the case of tellurium and sulphur doped GaSb.

**Keywords: GaSb, photoluminescence, liquid phase epitaxy**