Characterization of laser-treated Opuntia using FT-IR spectroscopy and thermal analysis

Mejías Díaz, K.D. , Flores Reyes, T., Ponce Cabrera, L., Domínguez Sánchez, M., Arronte García, M., de Posada Piñán, E.

CICATA-IPN, Unidad Altamira, Altamira, 89600, Mexico

Abstract

This paper presents the characterization of Opuntia samples whose thorns were removed by laser pulses. The characterization was performed by Fourier transform infrared (FT-IR) spectroscopy and differential scanning calorimetry (DSC). In this study we performed a comparative analysis of samples before and after treatment by using a Nd:YAG laser emitting at 1064 nm with an energy variable of up to 0.9 J. It was determined that no significant morphological or compositional changes had taken place in the cactus epidermis due to the laser treatment.