

Spectral Imaging of Melanoma

CASTELLO DE LA PLANA, Spain, June 23, 2009 – A new digital analysis system of multispectral images that helps physicians distinguish melanoma from other kinds of skin diseases is in process of being developed.

The Computer Vision research group at the Universitat Jaume I (UJI) of Castelló is working with the Hospitals Consortium of Castelló on the research project entitled, "Characterization of melanoma through spectral imaging," which will be carried out by physicians of the Oncology, Surgery and Dermatology Departments of the Castelló Provincial Hospital. The research will be led by surgeon Enrique Boldó and technicians from the Department of Computer Languages and Systems, directed by Professor Filiberto Pla. Together, they will create a database with multispectral images of melanomas and will select the multispectral bands for their subsequent study and classification.

The first stage includes the analysis of dermoscopic images of melanomas and benign lesions to determine whether the distinctive features might be identified by a computer. The second stage includes a dermoscopy during the patient's visit to the dermatologist and a spectrography during visits to oncology surgeons to later compare both results and check them against the pathologic anatomy.

The objective is to determine what substances can be applied on the melanoma to facilitate its spectrographic analysis, and what multispectral features help diagnose melanomas. All this is carried out with the aim of creating an application software to improve medical assistance.

According to Boldó, melanoma is the most widespread tumor worldwide and, in the early nineties, Castelló was the Spanish province with the highest mortality rate among the masculine population. The Castelló Provincial Hospital has developed innovative techniques to treat melanomas such as surgery guided by radioisotopes and the sentry node, as well as the melanoma vaccination prepared with the patient's own tumor cells.

Furthermore, the Consortium of Hospitals and its Foundation are conducting a study in collaboration with the Spanish Centre of Oncology Research (CNIO) to know the genetic characteristics of patients from Castelló with melanoma. This study will enhance the effectiveness of treatments as it will no longer depend on data of patients from other countries or other parts of Spain.