

(QuimoVox) - QuimoVox: Chemographic imaging synthesis tool

Contact information

Address: Main researchers:

- JUAN IGNACIO GODINO LLORENTE

ignacio.godino@upm.es

- RUBEN FRAILE MUÑOZ

r.fraile@upm.es

- VICTOR JOSE OSMA RUIZ

v.osma@upm.es

- JUANA MARIA GUTIERREZ ARRIOLA

juana.gutierrez.arriola@upm.es

Other UPM researchers:

- Nicolás Sáenz Lechón

Technological Offers type

[Software](#)

Research and innovation areas

- [Salud y bienestar](#)

Where?

[Bioengineering and Optoelectronics Research Group](#) [Multimedia and Acoustics Applications \(GAMMA\)](#) [Software and Multimedia Systems](#) [Technologies for Sustainability Research Centre \(CITSEM\)](#)

Software description

The main aim of QuimoVox is to help medical professionals to detect and diagnose diseases and dysfunctions in the vocal chords using graphic representation of the mucosal wave. The mucosal wave is understood to be the periodic pattern of movement made by the vocal chords during phonation.

The pioneers in developing applications focussing on graphic representation and processing of the mucosal wave were the researchers from the Department of speech therapy and paediatric audiology at the Friedrich-Alexander de Erlangen University (Nuremberg). Their many works have been directed at direct representation, using a sequence of images delivered by a high speed digital camera.

QuimoVox is an application that enables chemograms, one of the ways of representing the mucosal wave, to be produced using pre-recorded conventional video images. The application is also equipped with various image processing techniques, that the doctor may combine as they like to improve the quality of the available images.

The combination of these two factors means the doctor can *¿play¿* with the frames to get chemograms where this could not have been

possible previously, due to the bad quality of the images, or sudden movements by the patient, that voided the operation. There is currently no commercial system available that makes chemograms from pre-recorded stroboscopic videos, and which allows the user to choose the image processing procedures to be used on the frames. On the contrary, most systems apply a pre-defined procedural sequence to the images that makes it impossible to get chemograms from low quality images. QuimoVox has all these features and has, therefore, become a particularly interesting tool for medical professionals.

The specific aims of the system are as follows:

1. Make a graphic representation of the mucosal wave using pre-recorded videos of the vocal chords.
2. Improve representations obtained using defective videos, or with bad image quality, using digital image processing techniques.

Reference

M-1532/2010