TEC-0125/P-0037

Medical device based on microwave technology for prevention and diagnosis of diseases

BACKGROUND

Colorectal cancer (CRC) is a serious health burden in which screening is capable of reducing both the mortality and the incidence of the disorder. Among cancer types, CRC is one of the deadliest cancers.

Colonoscopy is the golden standard in colorectal screening. However, the main weakness of colonoscopy (and endoscopy in general) is the lack of information during the procedure, and thus the results are highly influenced by the training level of the physician. During an exploration, the only information is provided by the camera on the tip of the endoscope. Due to the movement of the intestine, the task of finding a predetected suspicious mass based on a static image is difficult. Moreover, flat polyps or tumors behind the intestine walls are difficult to visualize. Endoscopic ultrasonography provides images during the exploration, but due to the lack of flexibility of the device, it can only reach the end of the rectum.

THE TECHNOLOGY

The invention consists in the integration of a microwave system in a medical device for imaging and tissue characterization purposes. It covers the apparatus engaged to the distal end of the medical device and the methods used for visualization and its integration with the existing device. Microwave imaging provides contactless imaging and tissue characterization capabilities with a fair tradeoff between resolution and penetration. It exploits a new contrast mechanism based on the electrical properties of tissues that is specifically important between healthy and pathological tissues.

ADVANTAGES

- improve the early diagnosis
- real-time information during the procedure
- detect hidden tumors and flat polyps

STATE OF DEVELOPMENT

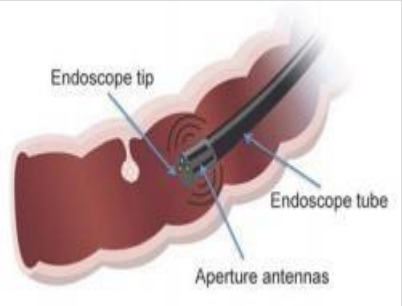
Fully functional prototype.

INTELLECTUAL PROPERTY

Patent application filed.
Technology ownership shared among Universitat Pompeu Fabra (60%), Universitat Politècnica de Catalunya (20%) and Hospital Clínic de Barcelona (20%).

MARKET OPPORTUNITY

External market experts demonstrate that medical imaging market shows a continuous and sustainable growth. According to a 2013 TriMark Study, the current volume of this market is on 20B€, it is predicted to reach 26B€ in 2017 and to spike to over 30B€ by 2019.



COMMERCIAL OPPORTUNITY

Technology available for licensing with technical cooperation

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KEYWORDS

Microwave imaging, endoscopic explorations, colonoscopy

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