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Android based cholesterol detection technology

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Regular cholesterol tracking has always been a challenging issue for heart patients, since; existing clinical technique requires at least 14 hours of fasting along with 1-2 days for result evaluation. In this work, we have presented an approach to measure cholesterol level without any prior fasting. Unlike traditional method of cholesterol testing, the proposed method will be fast along with providing reasonable adequate results. The project aims at delivering an effective technique to identify cholesterol levels in an individual using mobile technology so as to prevent number of increasing heart disease. The main purpose of this project is to create simple, compact assembly as a supporting base for the developed cholesterol strip and relevant steps will be taken to transfer the acquire image into mobile's memory. An app will run in mobile phone to quantify the cholesterol in developed strip to get required outcome. This reagent strip contains serum sample for cholesterol analysis. An enzymatic reaction converts total cholesterol and HDL cholesterol to choles-4en-3-one and hydrogen peroxide. The peroxide then reacts with disubstituted aniline to form quinoeimine dyes. The system can quantify cholesterol levels from colorimetric changes due to cholesterol reacting enzymatically on a dry reagent test strip. Further a smartphone application has been developed for the android iOS platform that in combination with the smart CARD accessory allows for image acquisition and colorimetric analysis of the cholesterol enzymatic reaction. When the user presses "analyze" on the app, an image of the colorimetric color changes is acquired through the phone camera.

Biography

Swati Checker has completed her PhD from Indian Institute of Technology Bombay and currently working as an Associate Professor in Department of Biomedical Engineering at MGM College of Engineering and Technology, India. She has published 8 papers in reputed journals, attended 4 international conferences and has been part of a national workshop on biosignals acquisition and processing at MGMCET. She has been awarded first prize to 'Urea Biosensor' proposal by Intellectual Ventures in 2009. She has been Mentor to a students in Kishore Vaigyanic Protsahan Yojna (KVPY) organized by IIT Bombay (June 2009), a scheme of national science fellowship to students interested in research careers. She has represented India under the Indo-UK Young Entrepreneur Scheme (YES) in October 2007 at Oxford, UK for business plan competition as part of a five member team from IITB, Mumbai.

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