

### Revolutionary Development of E-Tattoo for Heart Monitoring

Technological advancements have played a great part in advancement of human civilization. The radical changes can be witnessed in all walks of life; transportation, space exploration and communication, but its impact has been the brightest in the field of medicine and human health. With the advent of Information and Communication Technologies (ICT), the phenomena of globalization was set in motion and soon knowledge boundaries that were associated with the geography of a country, were shattered and decimated. The minds collaborated and through phenomenal synergic effects, the revolution of progress was launched and new research frontiers were conquered.

It has been this very pattern of consistent endeavor for better quality of life that the trend of wearable consumer electrocardiogram and smart phone application to monitor health indicators have become a mainstream phenomenon, one example is Apple's Watch Series 04. But the borders have been pushed further, recently a research team led by Nanshu Lu from University of Texas at Austin has developed a considerably thin and stretchable "Electronic Tattoo or E-Tattoo" that can be placed or rather pasted on the chest to monitor electrocardiogram (ECG) and seismocardiograph (SCG) readings.

The revolutionary side of this monitor is that it has a thickness of about 28-micrometer or 0.028 millimeters (thanks to the material with which it is made; polyvinylidene fluoride), putting it into perspective, remember that an 80 grams art paper is only 0.09mm thick. Further no adhesive tape is required to place the monitor on chest, it only requires an area of 63.5mm by 38.1mm.

It is to be noted that based on the method of seismograph that detects tremors in the ground for earthquakes, this monitor can read not only

the heartbeats but also the chest movements, and even stronger reading can be obtained when the monitor is placed right over the heart. What else adds to the monitor's efficiency and smartness is, that it is powered by smart phone and instantaneous data can be received using the smartphone application.

At the moment the research team is focused on data storage on the monitor and wireless power to perform over a longer period of time. Once these factors are harnessed, it would be considered a great leap for further research and medical advancement and usual boxy and rigid monitors would soon be obsolete.

**Prof. Dr. Syed Amir Gilani**

Editor in Chief

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