An Economical Approach To Detect Vaping, Preventing a Vaping Epidemic Among Adolescents

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There has been an alarming rise in the number of teenagers who have vaped in the past few years. It is important to detect when teenagers are vaping to prevent addiction and a negative impact on their health. Currently, there is no cost-effective option to detect vaping. The current vape detection options are expensive and not economically feasible for low-budget schools and homes. The goal of this research is to develop an economic and practical device to detect nicotine, a critical component of vapes. A chemi-resistor sensor, based on a nanocomposite derived from carbon nanotubes and doped conducting polymers, was created to detect nicotine in vape aerosol. The sensor was tested with vape liquid containing various concentrations of nicotine, and a regression model was established. Furthermore, the sensor was paired with open-source hardware, to push notifications to any mobile phone, when vaping is detected.

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