Capturing Fingerprint Using a Simple Laser Marker and a Mobile Phone

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The main goal of the project was, without using any chemicals, to capture the fingerprint which is not on a glass surface using a simple laser marker and a mobile phone. The process depended on the basic principle of total reflection of light. First, I left the fingerprint on the surface. With the help of beam expander system, I expanded the size of the laser to the size of the fingerprint. I sent the light to the surface where the fingerprint was placed so that there was total reflection with a bigger angle than the border angle (45 degrees). As there was total reflection on the borders of air and glass, at the same time, it travelled like a damped wave. Being more intense closer to the surface, and becoming less intense as it moved away, it made the fingerprint on the surface became noticeable. Its stability, uniqueness and categorizable features make fingerprint unique and special. It can be possible to transfer fingerprints to a central data processor via GSM network and match the fingerprints in the bank we generated. This device can be used in many places. If it is used for criminal purposes, it will enable the police to reach the necessary information without leaving the crime scene. It is possible to take the picture of the fingerprint in the crime scene without using a chemical and using a GSM network, police can connect to the central data processor and match the fingerprint with the ones in the bank.

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