ENHANCING TENNIS PERFORMANCE USING A SPECIAL SURFACE THAT TRACKS BALL IMPACTS AND PLAYER REACTION TIMES

TECHNIS, A SMART TENNIS COURT SURFACE

How can the effectiveness of a tennis shot be measured? How can a player raise performance levels and cut reaction times? The Technis project is a smart court surface that detects physical contact and provides feedback not only about ball impacts, but also about the athlete’s speed of reaction.

The surface was designed by Technis, a startup supported by the Laboratory for Photonic Materials and Characterization (LPMAT) with funding from Innogrant. It incorporates a mesh of piezoelectric fibers able to detect physical contact. Machine-learning algorithms and techniques allow the system to fine-tune its measurements and analysis during use. It can be applied anywhere and is water-resistant, providing an alternative to conventional training. The precise location of impacts, ball speed and player movement stats can be used to analyze performance during training. Data can be visualized using an application, which maps out the various shots played. The system presents an all-round picture of players’ performance in a fun way, helping players to improve the technical side of their game.

Piezoelectric fibers
Laboratory for Photonic Materials and Characterization (LPMAT)
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Technis application for tracking improvements.

Areas equipped with sensors to determine the quality of the player’s movements and stroke accuracy.