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## A new construction technique of high granularity and high transparency Drift Chambers for modern High Energy Physics experiments

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Modern experiments for the search of extremely rare processes require high resolutions (order of 50-200 keV/c) tracking systems for particle momenta in the range of 50-300 MeV/c, which is totally dominated by multiple scattering contributions.

We present a newly developed construction technique for ultra-low mass, high granularity Drift Chambers fulfilling this goal. It consists of:

- a semiautomatic wiring machine with a high degree of control over wire mechanical tensioning (better than 0.5g) and over wire positioning (of the order of 20 $\mu$ m) for simultaneous wiring of multi-wire layers;
- a contact-less IR laser soldering tool designed for a feed-through-less wire anchoring system;
- an automatic handling system for storing and transporting the multi-wire layers to be placed over the drift chamber end-plates.

These techniques have been successfully implemented at INFN-Lecce and University of Salento and are currently being used for the construction of Drift Chamber of the MEG ( $\mu \rightarrow e + \gamma$ ) upgrade experiment

### Collaboration

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