

Technical parameters

How to get to us

Make visions come true

Specifications of the Test Drive Facility

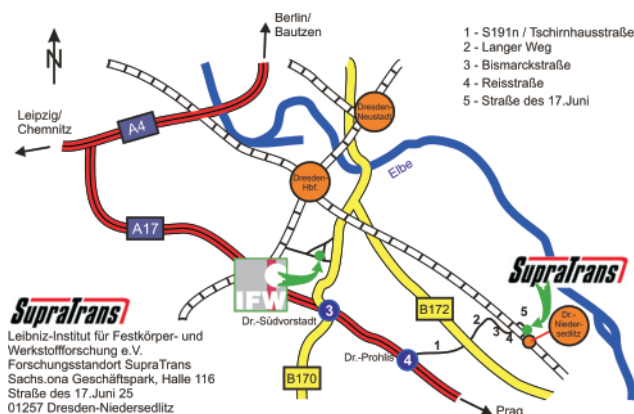
Drive way

Track Gauge	1,000 mm
Track length	80 m
Middle curve radius	6.5 m
Mean flux density in the air space	0.6 T
Distance superconductor track	13 mm
mechanical air gap below cryostat	10 mm

Vehicle

Length	2,500 mm
Width	1,200 mm
Total mass (incl. 2 persons)	600 kg
Superconductor material	YBCO
Max. power of the drive	3.4 kW
Max. thrust force	600 N
Max. acceleration	1 m/s ²
Max. velocity	20 km/h

Technical modification reserve!



Inspection of the Test Drive Facility SupraTrans II

• Requests at: besucher@supratrans.de

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Wir bauen
Zukunft

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Project

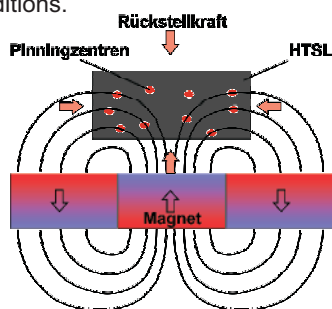
The development of compact high-temperature-superconductors (HTSL) has made considerable progress in the last years to the extent that their use in frictionless transport systems appears possible.

As far as the project SupraTrans is concerned, the question is to be answered whether this technology is suitable for the use as structural and guiding system. Furthermore, the conditions for its use in transport systems are to be determined.

In 2002-2004, the "SupraTrans" – the demonstrator – was built as a result of a technological development of 7 partners from rail engineering, transportation companies and public research. The rail track with a length of 7 metres demonstrates the fundamental suitability of the superconductor-technology for an inherently stable transport system which can be operated without any active control.

The next step towards a real transport system started at the IFW Dresden in 2009 with the work carried out at the "SupraTrans II", the oval test drive facility having a length of 80 metres.

The target of the work at the test drive facility "SupraTrans II" is the testing of the vehicle and drive way components of a super-conductively supported magnetic levitation system for the transportation of passengers and cargo in practice-related conditions.



Principle of the superconductive magnet bearing

Testing plant

SupraTrans II is a research investment of IFW Dresden and has been realised by evico GmbH as system supplier in cooperation with regional partners.

New, practice-related components:

- Curved drive way sections
- Control and communication systems for simultaneous operation of several vehicles
- Continuous power supply of the vehicle
- Optional drive way branching (point)
- Two independent brake systems



Routing of drive testing plant

Drive way

- Flat, unitized track segments that can be easily combined
- Flexible geometry of routing can be realised

Vehicle

- Drive by means of three-phase asynchronous linear motor (company Oswald from Miltenberg)
- Inductive power transmission from the travel way to the vehicle (company Wampfler system)

Control and communication systems

- Monitoring and influence on travel operation (company ELBAS)
- Reaction to the performance of other vehicles
- Automatic or manual vehicle control

Prospects

Super-conductive bearings make new types of urban movement possible. Within a very short time, the direction of travel can be changed using electromagnetic points. With regard to rail-bound individual transportation, this means a remarkable reduction of travel time and required power.

As far as internal transport systems, such as in productronics as well as food and pharmaceutical industry are concerned, further fields of application open up for the industry due to the bearing being free from wear and abrasion.



Internal transport system
(Source: Montech AG / Switzerland)



Concept study / TU Dresden