### New UIC certification criteria for the approval of brake pads

Registration (please send to contact address on the right)	Registrations can also be made by e-mail to matthias.niessner@hm.edu without using this form.
Name	The seminar is limited to 15 participants. Early reg- istration is therefore recommended.
Company	Contact address at the University for information and registration
	Munich University of Applied Sciences
	Prof. DrIng. Matthias Niessner
Position	Department of Applied Sciences and Mechatronics
	Lothstr. 34
	D-80335 Munich, Germany
Address (invoice address)	Phone +49-(0)89-1265-1665
	Mobile +49-(0)177-7615609
	E-mail matthias.niessner@hm.edu

http://www.railwayresearch.eu

Signature (not required by registration via e-mail)

#### **Participation fee**

Address (invoice address)

Phone

E-mail

329 EUR plus 19% value added tax. After registration you will receive a confirmation and an invoice by e-mail. The fee is payable in EUR.

Coffee, drinks, and lunchtime snack are included.

#### Organiser

Prof. Dr.-Ing. Matthias Niessner Sophienstr. 22, 85737 Ismaning, Germany

#### Disclaimer

In case the seminar has to be cancelled for reasons the organiser cannot influence (e.g. illness) already paid participation fees will be refunded. The organiser cannot be made liable for any other damage.

Cancellation of the registration has to be made in writing. A cancellation up to 7 days prior to the seminar is free of charge, already paid fees will be refunded. In case of later cancellation or non-appearance the full participation fee has to be paid.

The indicated value added tax rate is subject to change.

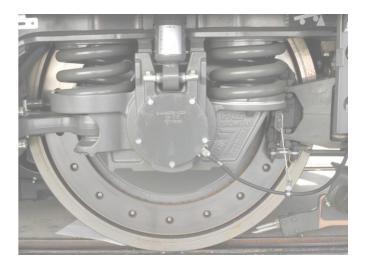
## 1-day Seminar on 9<sup>th</sup> of February 2017 in Munich

# New UIC certification criteria for the approval of brake pads

The 8<sup>th</sup> edition of the UIC leaflet 541-3 contains completely new test programmes for freight cars, locomotives and multiple units and new, flexible certification criteria for railway brake pads.

This seminar explains in detail the new certification concept and introduces the UIC evaluation tool developed at the Munich University of Applied Sciences.

As a guest lecture JURID and FERODO friction materials for UIC 541-3 will be presented by Maik Schlauss, Federal-Mogul, Glinde.



### New UIC certification criteria for the approval of brake pads

### The 8<sup>th</sup> edition of UIC leaflet 541-3

The UIC leaflet 541-3 was introduced in 1977 to describe the general conditions for the approval of railway brake pads mainly for passenger coaches operating at relatively low speed.

Since then the vehicles, operating conditions, and performance requirements have significantly changed. Trains have become faster and heavier and multiple units have been developed offering high electro-dynamic brake effort resulting in a large variation of the braked mass of the friction brake system. Modern brake pads need to fulfill these requirements and offer stable and reliable friction.

Consequently, the development of new dynamometer test programmes and evaluation criteria for brake pad certification was necessary. The new 8<sup>th</sup> edition\* of the UIC leaflet 541-3 contains completely new test programmes for multiple units, locomotives and freight cars including new certification criteria. Besides the applicationspecific test programmes a generic programme is included to derive consistent programmes for upcoming new vehicle classes.

To allow a convenient evaluation of test data according to the new criteria an MS Excel based **evaluation tool** was developed at the Munich University of Applied Sciences. The software is available from the UIC together with the leaflet.

\* Expected publication date at the end of 2016

### Agenda for 9<sup>th</sup> of February 2017

09.30-10.00	Arrival of participants
10.00	Welcome
10.00-10.30	Introduction, activities of the railway research group at Munich University of Applied Sciences.
10.30-12.00	The new UIC leaflet 541-3, new test programmes and new certification criteria.
12.00-12.30	<i>Guest lecture</i> "JURID and FERODO friction materials for UIC 541-3" Maik Schlauss, Federal-Mogul
12.30-13.30	Lunch break
13.30-15.00	Analysis of test data using the new UIC evaluation tool (teaching version available)
15.00-15.15	New brake pad shapes and geometrical requirements.
15.15-15.30	<i>Optional</i> Performance criteria of the friction pair according to EN14535
15.30-16.00	Outlook on alternative evaluation criteria based on penalty points
16.00	Closure of the seminar

All lectures will be presented by Prof. Niessner except the guest lecture from Federal-Mogul.

Language English

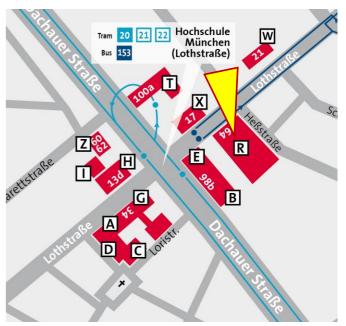
# 1-day Seminar on 9<sup>th</sup> of February 2017 in Munich

#### **Seminar location**

Munich University of Applied Sciences Hochschule München Lothstr. 64 D-80335 Munich Building R Room R1.086



Location close to tram station "Hochschule München (Lothstraße)" Tram lines 20, 21, 22 from Munich central station



Hotel recommendation (10 minutes walk to the University) Hotel Erzgiesserei Europe Erzgiessereistr. 15 D-80335 Munich, Germany Phone+49 89 12 68 2-0 E-mail reception.muc@europe-hotels-int.de