41st International Vienna Motor Symposium

22 - 24 April 2020, Congress Center Hofburg Vienna

DESIGN
of
LECTURES

The contents of this information brochure as well as a template for the text layout can also be found on our homepage

http://www.vienna-motorsymposium.com

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1. Lecture Duration/Lecture Language:

TOTAL LENGTH OF LECTURE: The lecture should not exceed 20 minutes. Ten minutes is reserved for discussion.

- Please send the text of your oral presentation to the organizer (ÖVK) 2 weeks prior to the symposium at the latest so that the interpreters can prepare.

- Please speak clearly and slowly to allow for optimum simultaneous interpretation.

2. Text of Lecture for Publication in the VDI Volumes

2.1 General Information

As your lecture will be published in the Progress Reports of VDI (The Association of German Engineers), Series 12, Verkehrstechnik/Fahrzeugtechnik, it is absolutely necessary to provide us with a complete text version (including the figures) of your lecture.

The submission of the presentation foils alone is not sufficient in this respect.

Your lecture will be published in the Progress Reports of VDI in colour.

The manuscript is required on paper AND in electronic form (PDF format). This reference print out will, with respect to the text (pagination, etc.), remain unchanged for the final print layout.

The maximum number of pages is 20.

Please ensure that your original does not have to be edited in any way. Only this original will be used for printing.

Lectures written originally in English do not require translation into German.

By confirming its acceptance of a manuscript, the International Vienna Motor Symposium obtains unlimited usage rights for reproduction and distribution in all currently known forms and for all kinds of use cases.
Subsequent publications (even in extracts) elsewhere by the author will be permitted by the organizers on prior request, whereby the source of original publication by the International Vienna Motor Symposium must be correctly cited.

2.2 Use of the Template on our Website

For uniformity, please use the template on the homepage of the Vienna International Motor Symposium www.vienna-motorsymposium.com. The pre-defined head and bottom lines, as well as the indicated side margins, must be respected IN ALL CASES and no notes of any type are permissible.

On the first page (specimen page 5) you have to indicate your academic title, first

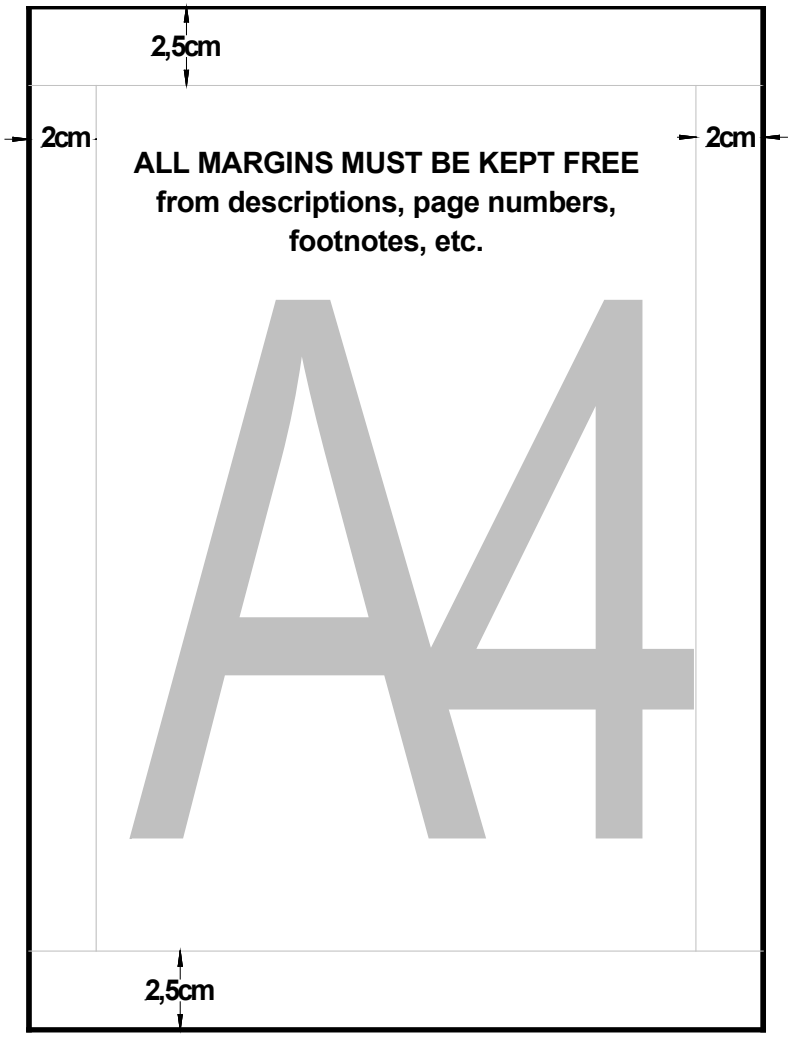
name(s) and surname(s) of the author and co-author(s), the title of the lecture in both German and English, as well as German and English abstracts (approx. 20 lines each).

PLEASE do NOT use page numbers.

2.3 Use of your own Form

If you use your own form, then please observe the following instructions:

- DIN A4-sheet
- Top page margin 2.5 cm
- Bottom page margin 2.5 cm
- Side page margins (right and left) 2 cm
- All side margins must be kept free from descriptions and footnotes
- Page numbers to be marked in pencil on the back
- Type size for the text: 3 mm or 12 dots
- Type size for headlines: 4 mm or 14 dots
- First page (specimen page 5) should contain academic degree, first name(s), surname of the author(s), title of lecture in German and English
- Abstract in German and English (approx. 20 lines each)
- PLEASE DO NOT enter page numbers
- PLEASE DO NOT include footlines



3. Graphic Layout for the Presentation of the Lecture

- Title, structuring and summary of the lecture should be illustrated by slides containing texts. A total of 15 - 20 slides, however, should not be exceeded.

- BASIC RULE: The audience has max. 30 seconds to look at your slide.
  If the picture is so complex that the audience cannot understand it within these 30 seconds, it is rather pointless to show it.

  Therefore, please bear in mind:

- Convey just one significant message in each graph.
  Use a simple structure and simple texts.

Illustrations shown in the printed volume of the lectures (in extenso manuscript for publication) may contain significantly more information than the graphs destined for the oral presentation.

3.1 Picture Format

The layout of the folios should be in the format 16:9. The folio format 4:3 is likewise supported. However, in this case, the available projection area in the lecture halls will not be used in its entirety.

3.2 Minimum Type Size

Recommended type size for a DIN A4-sheet:

Text (Title of lecture, summary, picture title, etc.):	8 mm or 32 dots
Diagram legends:	6 mm or 24 dots

3.3 Minimum Line Pitch

Recommended line pitch

- of major lines:	0.7 mm or 2 dots
- subsidiary lines:	0.35 mm or 1 dot

No type with shading in the background.

Fonts smaller than 16 dots are illegible.

3.4 Colours

Projection always results in poorer picture perceptibility than on a monitor.

The quality impairment can be easily checked: produce a black-and-white copy of your coloured graph. If all the details can be seen clearly and distinctly on this print-out, then this graph will also be of good quality on the projector screen.

Therefore:

Background: one colour, no shading, no silhouettes, no decorative illustrations.

Clear brightness differences between lines, legend and background.

GOOD:

WHITE	BLACK	RED BLACK BLUE

Background	Line, Legend
Blue	White
Yellow	Black
White	Black

BAD:

RED, GREEN	GREY	BLACK

Background	Line, Legend
Blue	Red, Green
Grey	
Brown	

4. Further Information

We recommend using Microsoft PowerPoint (Version PowerPoint 2016 is supported).

Function tests of the computer and the presentation techniques have to be carried out in good time before the presentation (on the evening before the meeting or during breaks). These tests have to be arranged together with an ÖVK technician.

It is highly recommended for computerization safety that lecturers take along a copy of their oral presentation with them (on a USB-Stick, CD, etc.).

Should a company's own design font be used which is not compatible to all PCs then these fonts must be embedded in your presentation or made available as a security copy – otherwise faulty representations may well occur in the projection.

5. Specimen of a First Page:

(A template for the text layout can also be found on the homepage of International Vienna Motor Symposium www.vienna-motorsymposium.com. Type and size as well as all side margins are set).

Dipl.-Ing. M. Frank, Dipl.-Ing. M. Gesk, Dr.-Ing. W. Samenfink, Dipl.-Ing. J. Gerhardt,
Robert Bosch GmbH, Stuttgart;
Dipl.-Ing. B. Hackl, Dipl.-Ing. M. Urbanek, Dr. P. Hofmann, Prof. Dr. B. Geringer,
University of Technology, Vienna:

New Methods for the Selection of Injectors and the Start-Tuning of Gasoline Engines with Port Injection

Neue Wege bei der Injektorauswahl und der Startabstimmung von Ottomotoren mit Saugrohreinspritzung

Abstract:

To achieve the emission limits in the future, the potential of the mixture formation during the cold start has to be raised. But such improvements must not decrease the cost/benefit balance of gasoline engines with port fuel injection.

Analyses with different mixture formation systems have been made. Some conventional standard injectors as well as injectors with reduced Sauter Mean Diameter (SMD) have been analysed concerning their potential to reduce the HC emissions during the cold start.

Additionally some injectors whose injection orifice plate was fabricated using a new technology were tested. With a high and low pressure indication, a 1-D gas change analysis as well as measurements with a fast flame ionization detector, the crank angle based HC-mass flow was deduced. To evaluate the different injectors next to the HC-emissions the characteristics of the combustion, the speed rise and the wall-applied fuel mass were analysed.

The reduction of the SMD leads to an improvement of the mixture formation and the homogenization, so that with emaciation the energy conversion with an optimal efficiency of the combustion during the first cycles was much faster ...

Kurzfassung

Zur Erfüllung zukünftiger Emissionsgrenzwerte gilt es auch das Potenzial einer verbesserten Gemischaufbereitung in der Kaltstartphase zu heben. Verbesserungen diesbezüglich dürfen aber die attraktive Kosten/Nutzen Bilanz von saugrohreinspritzenden
Ottomotoren nicht gefährden.

In einer Studie zur Startphase werden Untersuchungen mit verschiedenen Gemisch-aufbereitungssystemen durchgeführt, darunter konventionelle Standardinjektoren sowie Injektoren mit reduzierter mittlerer Tropfengröße (Sauterdurchmesser SMD), und bezüglich ihres Potenzials zur Senkung der HC-Emissionen beim Kaltstart analysiert.

Auch die Möglichkeiten eines neuen Ansatzes zur Verbesserung der Zerstäubungsstrategie werden bewertet.

Mittels Hoch- und Niederdruckindizierung, 1-D Ladungswechselrechnung sowie Messungen mit einem schnellen Flammenionisationsdetektor wird der kurbelwinkel-aufgelöste HC-Massenstrom ermittelt. Zur Beurteilung wird neben den HC-Emissionen auch die Verbrennungsanalyse sowie das Hochlauf- und Wandfilmverhalten betrachtet

Durch die Reduzierung des Tropfendurchmessers verbessert sich die Gemischbildung ...