

## The speakers



### Carl-Christian Hantschk

Carl-Christian Hantschk, Ph.D., holds a diploma in mechanical engineering and received his doctorate in thermodynamics from the Technical University Munich, Germany. His research focused on combustion driven acoustic oscillations in burners and combustion-acoustic interactions. He has been with Müller-BBM GmbH since 2001, working as a consulting engineer in industrial acoustics in Munich, Germany. He works on industrial acoustics in general, including theoretical and applied acoustics, environmental acoustics, aero-acoustics and numerical acoustics, with special focus on the interdisciplinary field between combustion and acoustics.



### Franco Casentini

Franco Casentini graduated in mechanical engineering at the Politecnico di Milano, with a final thesis work at the Technical University Munich, Germany on pulsating combustion. He worked as a process engineer at Alstom Power Boilers in Milan for 8 years. Franco Casentini has been with BBM Akustik Technologie since 2005, working as a project manager in Milan, Italy. His services include: acoustic planning, product specific consulting, client support for the Italian market from pre-sales to after-sales, from all kinds of steam and flue gas silencers to noise enclosures and boiler houses.

...and many other experts, planners, and technical specialists of Müller-BBM Group providing their know-how and expertise covering all fields of acoustics and noise control.



## Seminar information

### Dates

Year-round, according to your wishes.

### Location

On your premises, at your site, at your preferred conference center or at our seminar facilities at Müller-BBM GmbH, Planegg/Munich and Berlin, Germany.

### Participants

The number of participants should be limited to about 30 persons. Seminars usually include practical demonstrations and exercises which are most beneficial if every attendee can participate.

### Fees

Depending on duration of seminar – please ask for an offer.

We look forward to discussing your wishes for a customized seminar or workshop that best fits your specific requirements.

### For questions please contact:

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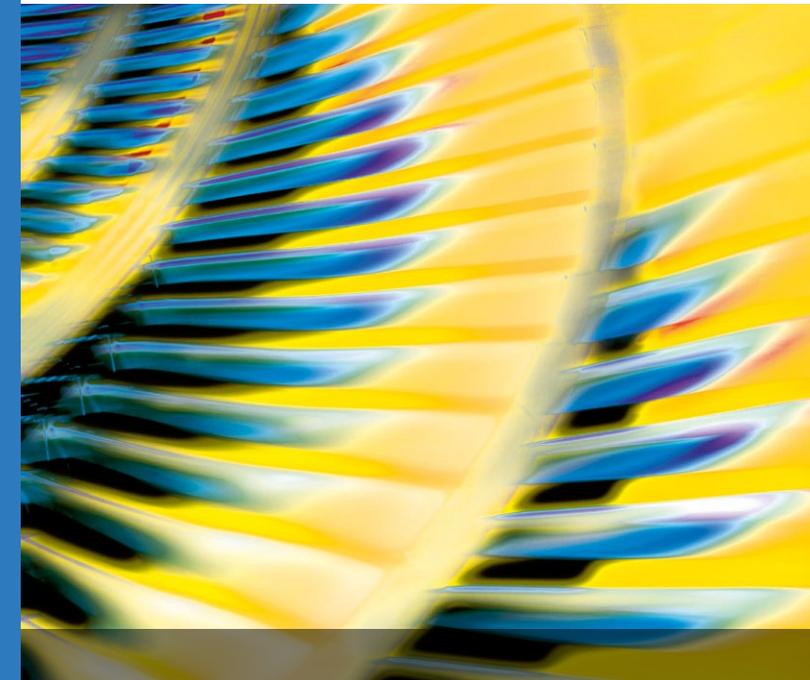
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## Client-specific seminars and workshops

- Acoustics
- Industrial acoustics
- Noise control

## Customized seminars and workshops on acoustics, industrial acoustics and noise control

Protection of personnel and environment from noise is an important issue in planning, approval management, erection, commissioning and operation of industrial plants. As public awareness and legal requirements on noise become more stringent, engineering companies, equipment suppliers, plant operators and authorities are increasingly facing acoustic challenges in planning, designing, approving and running of industrial activities.

To respond to these challenges, a sufficient understanding of the effects involved and the requirements to fulfil becomes indispensable.

Müller-BBM's experts with many years of experience explain and teach engineers, technicians and HSE responsables what they need to know about acoustics, industrial acoustics and noise control to make competitive proposals or run industrial plants safely and legally compliant.

From a general overview up to product- or application-specific contents – let us work out the tailor-made seminar or workshop for you that best fits your specific needs.

Müller-BBM is a technical consulting company with more than 370 employees at fourteen sites in Germany, Austria and Switzerland and a broad international customer base. With its independent consultants, planners and technical specialists, Müller-BBM has been providing expert consultation and advice to its clients since 1962, the company holds a leading position in all fields of acoustics, building physics and environmental protection. Müller-BBM is headquartered in Planegg/Munich, Germany.

BBM Akustik Technologie is a leading supplier of industrial silencers and enclosures. The company has solved industrial noise problems all over the world for more than 35 years. BBM Akustik Technologie is a member of the Müller-BBM Group and is headquartered in Planegg/Munich with offices in Germany, Milan/Italy, India, Mexico and the United States, with own workshops in Germany, India, Mexico and the United States, and with partners worldwide.

The range of services offered by BBM Akustik Technologie comprises acoustic engineering, product-specific advice, manufacturing, delivery and mounting of large-scale silencers, acoustically optimized facades, enclosures, engine exhaust silencers, and complete exhaust systems, particularly for power stations and production plants.



### Basic courses

Basic courses cover the fundamentals of acoustics and noise control and provide a thorough understanding of the most important aspects.

#### Fundamentals of acoustics

- Sound and noise
- Field quantities of the sound field
- Airborne and structure-borne sound
- Sound perception and hearing
- Quantities, units and arithmetics

#### Industrial acoustics

- Sound generation and radiation
- Source types
- Sound propagation in the free field and in rooms
- Acoustic modelling
- Measurement methods

#### Noise control

- Principles
- Noise control measures (primary, secondary, examples)
- Procedures and tools
- Noise control concepts and specifications
- Special solutions (blow-off and flue gas silencers, enclosures, boiler houses)

#### Practical part / demonstrations

- Examples and case studies
- Demonstrations
- Exercises



### Supplementary courses

Supplementary courses addressing topics and aspects that are specific to your business can be worked out by us according to your wishes. They complement the basic courses to make the seminar exactly fit your needs.

#### Industries

- Power production, energy distribution
- Chemistry, petrochemistry and refining
- Iron, steel and aluminium industry
- Wood and pulp
- Paper industry
- Glass production and processing
- ...

#### Applications

- Planning, bidding and design
- Approval management
- Specifications
- Commissioning and acceptance testing
- Noise at the workplace
- ...