

## Registration:

Course fee	EUR	Please select
Attendance option	plus 19% VAT	↓
"MR Safety Expert" 27,28,29 Oct 2022 physicists / physicians (Lectures & MRI hands-on):	1,490	
"MR Safety Expert" 27,28,29 Oct 2022 technologists / radiographers (Lectures & MRI hands-on):	1,190	

<input type="text"/>
Title, First name, Name
<input type="text"/>
Function title
<input type="text"/>
Organization
<input type="text"/>
Street, Number
<input type="text"/>
City, Zip-code
<input type="text"/>
Telephone, Fax
<input type="text"/>
Email
<input type="text"/>
Land / Country
<input type="text"/>
Date, Signature

Please send your registration to:  
MRI-STaR  
Fax: +49 209 149 77 30 88  
Email: [seminar@mri-star.com](mailto:seminar@mri-star.com)

## Information:

### Terms of payment:

The amount is due for payment 2 weeks after receipt of the invoice. The course fee must be paid via wire transfer, check or via credit card. Information is provided in separate invoice. Credit card information please provide here via fax:

Visa  MasterCard  AMEX

Credit card #

\_\_\_\_\_ Name of  
card holder \_\_\_\_\_  
valid until date \_\_\_\_\_

### Discounts:

#### 20% discount for online participation!

Students qualify for a 20% discount. Please send in a copy of an appropriate certificate proving your status.

Every 2<sup>nd</sup> and further registrant from the same organization applies for a 5% discount.

\*only 1 discount applicable

Registration is valid only with receipt of confirmation and payment of the course fee. Early booking deadline: 4 weeks before seminar date.

A cancellation is free of charge up to 6 weeks before the seminar date. After that date we charge 50% of the registration fee. For a cancellation within the last 7 days 80% are charged of the course fee. If the cancellation takes place later or the participant or a backup does not attend in the course, we are entitled to deduct the full participation fee.

**The course fees include: MRI-STaR certified MRSE exam, certificate, script, confirmation of participation, breakfast snack, lunch, dinner, hot and cold drinks.**

The number of participants is limited. The places will be assigned in sequence of the receipt of registrations. MR:comp reserves the right to offer an alternative seminar date, if the number of participants is too low or too high.

### SEMINAR LOCATION:

MRI-STaR GmbH  
Conference room  
Buschgrundstr. 23  
45894 Gelsenkirchen, Germany

**We would be pleased to welcome you as attendee!**



## ONLINE/ON SITE Hands-on MR Seminar

in  
Gelsenkirchen, Germany  
CEST Time Zone

## The "MR Safety Expert" (MRSE)

acc. to ABMRS Syllabus, DIN 6876-1,  
OENORM 1125-1/2, Dutch/MHRA/RANZCR  
Guidelines

## October 27-29, 2022

### Organizer

MRI-STaR GmbH & MR:comp GmbH  
[www.mri-star.com](http://www.mri-star.com)

**This course prepares the attendee to sit for the MRSE exam!**

In cooperation with VDE DGBMT Technical committee "MR  
Technology in Medicine"

**MRSE  Seminar Day 1:**

08:45	09:00	Welcoming / Breakfast	
09:00	09:30	Introduction	
09:30	09:45	Virtual visit of the MR system	Kug
09:45	11:15	<b>Basics of MR physics and technical aspects</b> - Static mag. field, RF-Field, Gradient-field - MR system components - Refresh of the physical principle - Physics of MRI (spin, magnetization, MR signal) - MR image acquisition (RF pulse sequences, gradients, geometry, signal to noise and contrast, contrast agents) - MR Imaging techniques (fast imaging, Perfusion, Diffusion, Spectroscopy)	Kug
11:15	11:30	Coffee break	
11:30	12:00	Safety instruction	Kug
12:00	12:10	Grab a coffee	
12:10	13:40	<b>MR safety and compatibility of medical devices (and items) I / Significant hazards MRI I</b> item-specific - Interactions of items (incl. implants) within the MR environment (static magnetic field, switched gradient and RF field) - Current technical standards & guidance, MR testing methods	Sch
13:40	14:25	Lunch break	
14:25	16:00	<b>Significant hazards MRI II</b> system-specific (MR safety, the MR system and the MR worker – IEC 60601-2-33) - General terms - Presentation of hazards - Technology of superconductivity and potential risks of cryogenics; Laser	Eng
16:00	16:30	Coffee break/Transfer to scanner	
16:30	18:30	<b>Hands-on: Behavioral measures in possible emergency situations for medical personnel, firefighters and for technical staff</b> - General behavior when entering the scanner room - Safety provisions for the MR environment - Magnetic emergency - Electricity failure and fire	Kug
18:30	19:15	Final discussion	

**MRSE  Seminar Day 2:**


08:30	09:00	Breakfast	
09:00	10:00	<b>Significant hazards MRI IV</b> - Contrast agents	Otto
10:00	10:15	Coffee break	
10:15	11:45	<b>Significant hazards MRI III</b> patient-specific - Risks with respect to the static magnetic field - RF field and gradient field - Examples from clinical practice	Kug
11:45	12:00	Grab a Coffee	
12:00	13:30	<b>Behavioral measures in MR routine I</b> - Access control to the scanner room - Patient positioning	Kug
13:30	14:30	Lunch break	
14:30	15:30	<b>Laws, regulations and clinical standards for MR operators</b> - Employee protection - Responsibilities	Sch
15:30	16:00	Coffee break/Transfer to scanner	
16:00	17:30	<b>Hands-on: Practical demonstrations and exercises</b> - Patient positioning - Medical emergency - Emergency exercises	Kug
17:30	18:00	Discussion / Get together dinner	

**Target audience:**

The seminar is especially designed for the **MR physicists, technologists/radiographers, MR clinicians.**

The seminar language is English. The MR user will learn about MR safety regulations, standards, measures inside the MR environment. The user will be elevated to be able to organize the MR environment as MR safety responsible expert using the MR safety measures, know-how about SOPs and organization of processes for patients, MR workers and volunteers or other individuals.

*Program is Subject to changes*

**MRSE  Seminar Day 3:**

08:30	09:00	Breakfast	
09:00	10:10	<b>MR safety and compatibility of medical devices (and items) II</b> - Finding the "worst-case" - Labeling of devices for the MR environment	Sch
10:10	10:20	Coffee break	
10:20	11:20	<b>Hands-on: Behavioral measures in MR routine II (Implant labeling research)</b> - Implant research - case studies	Sch
11:20	11:30	Coffee break	
11:30	12:30	<b>Behavioral measures in MR routine III</b> - Servicing and cleaning operations - Documentation (training, accidents)	Kug
12:30	13:15	<b>MRI-StaR Certificate Examination</b> (Multiple-Choice-Test) for free; <b>Optional:</b> ABMRS additional examination on official MRSE exam date	
13:15	13:30	Final discussion/Farewell	

**Lecturers:**

**Dr. rer. nat. H. Kugel**

Department of Clinical Radiology, University of Munster, Germany

**H. Engels, Ph.D.**

MR Safety Consultant, MR:comp and former MR Safety Director Philips Healthcare, The Netherlands

**Prof. H. Otto**

Radiologist, Marien Hospital, Gelsenkirchen, Germany

**Dipl.-Ing. (FH) G. Schaefers**

MR Safety Testing Laboratory, MR:comp GmbH, Gelsenkirchen, Germany

**\*The seminar will be held together with the separate course "Medical Device MR Safety Specialist (MRSS)" for industry participants (est. in 2007).**