

## SCIENTIFIC COMMITTEE

F. Barthelemy, DGA Land Systems, France  
T. Børvik, NTNU, Norway  
F. Boussu, ENSAIT, France  
F. Coghe, RMA, Belgium  
R. Figueiro, Univ. Minho, Portugal  
A. Heine, EMI, Germany  
P. Lundberg, FOI, Sweden  
F. Rondot, ISL, France and Germany

## CONTACT

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## LOCAL ORGANIZING COMMITTEE

Jérôme MESPOULET - THIOT INGENIERIE  
Paul DECONINCK - THIOT INGENIERIE  
Nelly DELECROIX - THIOT INGENIERIE  
Lisa SABATIÉ - THIOT INGENIERIE

# PRELIMINARY PROGRAM

## THEY SPONSOR THE EVENT:



Industrie



# LWAG 2024

Light-Weight Armour for Defence & Security

June 10-13, 2024

ROCAMADOUR- FRANCE

# Monday, June 10, 2024

14:00 – 18:00 Exhibitors booth setup

18:00 – 22:00 Registration and welcome reception

# Tuesday, June 11, 2024

8:00 – 8:30 Registration

8:30 – 8:45 Conference opening and administrative remarks

8:45 – 10:00 Exhibitors session

10:00 – 10:40 Coffee break

10:40 – 11:20 Keynote presentation

Senior Captain Marc MALDAGUE, retired from Belgium Army / RMA, Belgium

The wanderings of a ballistician in the world of quality

11:20 – 12:20 Session 1: Dynamic testing and modelling of materials under ballistic impact or blast #1

- 1.1 Thibault POULET, ISL, France & Germany  
Correlating mechanical properties with ballistic performances of UHMWPE composites: a comprehensive analysis
- 1.2 Pascal FORQUIN, L3SR, France  
Design, implementation and validation of shockless plate-impact experiments based on textured flyer-plate. Application to the dynamic testing of armour ceramics
- 1.3 Jan FALTA, CTU, Czech Republic  
Contactless measurement of impact force and projectile velocity using high-speed linear encoders: Application of penetration through light-weight cellular sandwich panel

12:20 – 14:00 Lunch break

14:00 – 15:40 Session 2: Protection against ballistic impact and blast for soldier, vehicle, aircraft and naval platforms #1

- 2.1 Ulrich DIEKES, IABG, Germany  
Hard-Kill Active Protection Systems for Armoured Vehicles
- 2.2 Solenn LE MOUROUX, KNDS, France  
Hypervelocity impacts on inert multilayer structures: experiments and simulations
- 2.3 Ana AZEVEDO, RMA, Belgium  
Finite element analysis of two different ballistic helmets
- 2.4 Telmo FERNANDES, TEMA, Portugal  
Impact performance enhancement of agglomerated cork layered structures through shear thickening fluid
- 2.5 Stephen WALLEY, CAVENDISH LAB., UK  
A high-speed photographic study of terminal ballistic impact on wood

15:40 – 16:10 Coffee break

16:10 – 17:30 Session 3: New materials for ballistic protections and blast attenuation

- 3.1 Madhav UMBHARATWALA, VNIT, India  
Experimental Investigation of MWCNT and Graphene Reinforced Cordura® Composite System Against High Velocity Ballistic Impact
- 3.2 Miguel Ángel RODRÍGUEZ-PÉREZ, CELLMAT, Spain  
New Nanocellular Foams for reducing shocks and impacts
- 3.3 Siddhesh S. RAUT, VNIT, India  
Harnessing Nanotechnology for Ballistic Protection: Experimental Study on MWCNT-Reinforced Alumina-Ballistic Nylon Composite
- 3.4 Maria VOZAROVA, RHP TECHNOLOGY, Austria  
Enhancing Armor Performance: Investigation into Lightweight Ceramic Composites for Defence and Security

17:30 – 22:30 Social event

# Wednesday, June 12, 2024

8:00 – 8:40 Registration and welcome

8:40 – 10:00 Session 4: Dynamic testing and modelling of materials under ballistic impact or blast #2

- 4.1 Phil GOTTS, PHIL GOTTS CONSULTING, UK  
Testing of Metallic Vehicle Armour – Where Test Methods Struggle with Reality
- 
- 4.2 Jérôme MESPOULET, THIOT INGÉNIERIE, France  
Strengthening of Aluminum alloys for ballistic protection using a single step Dynamic Plastic Deformation process
- 
- 4.3 Sanna ANDERSSON, FOI, Sweden  
Influence of small yaw angles on the limit velocity of AP-projectiles into alumina oxide targets
- 
- 4.4 Erik CARTON, TNO, The Netherlands  
Relation between hardness and dynamic flow stress for a range of steel types

10:00 – 10:40 Coffee break

10:40 – 11:40 Session 5: Damage and failure mechanisms under impact or blast #1

- 5.1 Frédéric NOZERES, KNDS, France  
Steel cylinder fragmentation using an advanced meshless approach coupled with a damage model for tensile and shear modes
- 
- 5.2 Michel ARRIGONI, ENSTA, France  
Characterization of autoclaved aerated concrete under impact loading
- 
- 5.3 Tore BØRVIK, NTNU, Norway  
On adiabatic shear banding in high-strength steel

11:40 – 12:10 LWAG Committee meeting and TI Shock Physics Laboratory visit briefing

12:10 – 13:40 Lunch break

14:30 – 18:00 TI Shock Physics Laboratory visit

18:30 – 23:00 Social event and banquet

# Thursday, June 13, 2024

8:00 – 8:40 Welcome

8:40 – 10:00 Session 6: Damage and failure mechanisms under impact or blast #2

- 6.1 Nicolas PRAT, IRBA, France  
Soft ballistic protection tends to worsen primary thoracic and abdominal injuries from exposure to high intensity blast, while hard plate addition mitigates them
- 
- 6.2 Stéphane BOUBANGA TOMBET, TELOPS, Canada  
Analysis of Ballistic Impacts on Composite Materials by Infrared Active Thermography
- 
- 6.3 Antoine PROUST, INDUSTRIEEL, France  
Adiabatic shear sensitivity of hard armour steel
- 
- 6.4 James YOUCHISON, SNL, USA  
Low-Cost Ballistic Resistant Smart Barrier

10:00 – 10:40 Coffee break

10:40 – 12:00 Session 7: Protection against ballistic for soldier, vehicle, aircraft and naval platforms #2

- 7.1 Angel MIRANDA VICARIO, RMA, Belgium  
Experimental Secondary Fragment Procedure for Testing of Light Textiles
- 
- 7.2 Andreas HEINE, EMI, Germany  
New approaches to the constitutive modeling of protective materials
- 
- 7.3 François BOUSSU, ENSAIT, France  
Hybrid armour solutions for blast resistant vehicles
- 
- 7.4 Nestor NSIAMPA, RMA, Belgium  
Modeling of ballistic impact on a ballistic helmet: Influence of impact locations

12:00 – 12:30 Round table and closing session

12:30 – 14:00 Lunch

## CONFERENCE LOCATION

### Hôtel Le Bois d'Imbert\* ★★★★★

Route de Lacave, le Bois d'Imbert - 46500 ROCAMADOUR



*\*first registered people will be accommodated in this hotel (another is planned when this one is fully booked).*

At Rocamadour, Lot (46)



## SOCIAL EVENT

### Grottes de Lacave

D23 - 46200 LACAVE



The temperature inside the caves is constant: 13 degrees all year round. Please bring a jacket or vest and comfortable shoes.

