

PROGRAM

# European Conference on Heat Treatment and Surface Engineering

**ECHT 2024 and  
A3TS 50<sup>th</sup> Congress**

**June 5-7, 2024  
TOULOUSE, FRANCE**



In coopération with:



# WELCOME

For its 50th edition, A3TS is pleased to welcome ECHT European Conference on Heat Treatment and Surface Engineering, making ECHT2024 the unique European event for Heat Treatment and Surface Engineering.

In the context of industry and transport transition to a sustainable and low-carbon future, materials processing and surface functionalization are critical in the value chain of equipment and systems : mechanical properties strengthened by heat treatments for increasingly lighter parts, improved surface finishes to reduce energy consumption, coatings to develop components for batteries, electrolysers and fuel cells, steels adapted to the transport and storage of hydrogen, electrical conductivity of surfaces, and so on ...

At the same time, industry must reduce its impact on environment and health and regulations push industry and research laboratories to develop new technologies to replace mature solutions based on hazardous materials.

ECHT 2024 - European Conference on Heat Treatment and Surface Engineering - will be a unique place to discover scientific advancements and innovative technologies as well as return on experience by industry. A3TS is pleased to present the program prepared with the support of european heat treatment associations.

Many papers and posters deal with aeronautic industry issues, however solutions and technologies are not limited to a unique field and most of them will find applications in automotive and other transportation sectors, energy, mechanical industries,...

*Flying to a sustainable future  
with ECHT 2024*

# A3TS, your network since 1969

Our aim is to disseminate and promote cutting-edge technological knowledge in the fields of materials processing, i.e. heat treatment and surface treatment. A3TS has some 800 members, including companies, French and international industrial organizations, engineers, researchers, experts and academics, who contribute to its day-to-day activities.

## A network of connected professionals

A3TS's highly active and friendly network is one of the association's key features. We are committed to fostering exchanges between members in a warm and welcoming environment.

## Our events

A3TS organizes several events each year: an annual Congress and Trade Show, and one-day scientific and technical conferences on current topics: Hydrogen, Chrome VI-free technologies, Thermal Protection Techniques, Additive Manufacturing, etc.

## Disseminating scientific and technological information

A3TS members have access, via the website and their member's area, to a unique database containing video recordings of Congress conferences, A3TS Science et Technique publications, process sheets updated by our specialists, and the information magazine A3TS Contacts.

Find out more about our latest news, upcoming events and training courses at [www.a3ts.org](http://www.a3ts.org)

Follow us on LinkedIn



Au titre de la catégorie  
**Actions de formation**

## They will take part in the opening session



**Laurent Pinto**

Metal Technology Senior Expert  
AIRBUS GROUP (FRANCE)



**Mélanie Bedu**

Manuf Eng Expert  
AIRBUS OPERATIONS  
(FRANCE)



**Thomas Ackerson**

Senior Metallurgist  
BLUE ORIGIN (USA)



**Marcel A. J. Somers**

Professor, Dr.ir., Department  
of Civil and Mechanical  
Engineering  
TECHNICAL UNIVERSITY  
DENMARK (DENMARK)



**Denis Descheemaeker**

General Manager  
IRT SAINT EXUPÉRY  
(FRANCE)

# Wednesday, June 5

## Plenary session

### Auditorium Saint Expupéry

- 9:15      **Opening of ECHT2024 Congress**  
*V. Vitry - A3TS President*
- 9:30      **Metallic and surface technologies development challenges toward a sustainable future**  
*M. Bedu, L. Pinto - Airbus Group, France*
- 10:15     **Materials Challenges for Reusable Hardware and Sustainable Processes for Space Travel in the Mid-21st Century**  
*T. Ackerson - Blue Origin, USA*
- 11:00     **Microstructure Optimization in Additively Manufactured Metals through Heat Treatment and Surface Engineering**  
*M. Somers - Technical University Denmark, Denmark*
- 11:45     **IRT ST Exupéry : Strategy - Technological roadmap**  
*D. Descheemaeker - IRT Saint Expupéry, France*

12:15     **Lunch**

## Sustainability in Heat Treatment

### Auditorium Saint Expupéry

- 14:00     **Future technologies for sparse resource high quality steel products**  
*M. Steinbacher, T. Oelker, R. Fechte-Heinen - Leibniz-Institut für Werkstofforientierte Technologien, IWT Bremen, Germany*
- 14:25     **Changes in Heat Treatment for Sustainability**  
*K. Buchner - Aichelin, Austria*
- 14:50     **CO2 emission and carburizing treatment : comparison between a classic belt furnace and a low pressure carburizing process**  
*V. Woimbee - Forvia, France, P. Pouloux - ECMTECH, France*

## Thermochemical treatments (I)

### Auditorium Saint Expupéry

- 15:15     **Characterisation of a low-pressure carbonitriding treatment with a high residual austenite content**  
*C. Depredurand - CETIM, France, D. Maréchal - IRT M2P, France, J. Dulcy - Université de Lorraine, France, A. Philippot - Asco-metal, France*
- 15:40     **(HT30) Comparison of Energy and Process Gas Consumption for Selected Vacuum and Atmosphere Case-Hardening and Furnace Concepts**  
*M. Rink - Ipsen International, Germany*
- 16:05     **The potential of new steel grades and treatments to meet the more and more demanding requirements of the bearing aerospace market**  
*O. Skiba, E. De La Rochefoucauld - IRT M2P, France, J. Bellus, C. Sidoroff - NTN-SNR, France, M. Millot - Safran Tech, France*

## Sustainability in Surface Treatments

### Guillaumet 1

- 14:00     **Sustainability vs. New Process Developments - Regulations and beyond**  
*W. Michaelis - Airbus Operations, Germany*

- 14:25 **Technology and processes for thin film coatings aimed at minimizing energy consumption and environmental footprint**  
P. Collignon - *PD2-I, France*
- 14:50 **Electrodeposition of composite nickel coatings from boric acid free electrolytes**  
F. Zoia, R. Bernasconi, [L. Magagnin](#) - *Politecnico di Milano, Italy*
- 15:15 **SIFCO ASC presents its NANO Cart for dripless electroplating applications**  
N. Desselas - *SIFCO ASC, France*
- 15:40 **Surface finishing in space industry**  
[M. Sanchez](#), [A. Zapata](#) - *Airbus Defence and Space, France*
- 16:05 **Zn-Fe alloy coatings as an alternative to Cd and ZnNi deposits in compliance with REACH and local EH&S standards**  
[L. Baissac](#) - *IRT M2P, France*, [L. Chantegrel](#) - *Electropoli, France*

## Digitalization - Industrie 4.0

### Guillaumet 2

- 14:00 **Digitalisation Considerations for Electroforming Nickel**  
[Sudipta Roy](#), Eleni Andreou - *Department of Chemical and Process Engineering, University of Strathclyde Glasgow*
- 14:25 **Enhancing industrial efficiency: A machine learning and real-time simulation approach to surface finishing**  
[B. Fedi](#), J. Schoenleber, K. Marchais, A. Boucher - *Hivelix, France*
- 14:50 **Micro-Arc Oxidation industrialization : A dual approach of simulation and experimentation for advanced aluminum treatment**  
[L. Rodriguez](#) - *Galvanoplastie Industrielle Toulousaine, France*, [B. Fedi](#), *Hivelix, France*, [A. Duby](#) - *Airbus Atlantic, France*
- 15:15 **Nucleation during electrodeposition by model method. Use of model method for parametric identification vs AFM pictures in the case of zinc, silver and alloy coatings**  
[B. Fedi](#) - *Hivelix, France*, J-M. Rauch - *IRT M2P, France*, M-P. Gigandet, A. Nevers, J-Y. Hihn - *UTINAM, Université Franche-Comté, France*
- 15:40 **Revolutionizing Heat Treatment through Digital Integration and Thermal-Loop Innovations**  
Peter Sherwin - *Watlow, USA*
- 16:05 **Panel discussion - Innovation competition on the forum**
- 18:00 **Show closing - Exhibitor cocktail**

## Thursday, June 6

## Thermochemical treatments (II)

### Foyer Saint Exupéry

- 8:30 **Influence of nitrogen and microstructural evolutions upon tempering in a low alloyed steel investigated by in situ HEXRD and post mortem HRTEM**  
[M. Costa Salazar](#), J. Teixeira, B. Denand, G. Geandier, A. Redjaïmia, J. Ghanbaja, C. Gendarme, S. Denis - *IJL, Université de Lorraine, France*, O. Skiba - *IRT M2P, France*
- 8:55 **Improved fatigue performance of stainless steels by low temperature surface hardening compared to conventional shot peening**  
[S. Gerritsen](#), A. Bauer - *Bodycote, Germany*
- 9:20 **Low Pressure CarboNitriding (LPCN): A new process modification to achieve predictable and stable C- and N-profiles**  
[Dr V.Heuer](#), D.Schmidt, Dr K.Löser - *ALD Vacuum technologies, Germany*



- 9:45 **Microstructure evolution during pack carburization of ferritic Fe-4 wt.% V alloy**  
A. Kashyap, S. Ram Meka - *Indian Institute of Technology Roorke, India*, B. Vishwanadh - *Bhabha Atomic Research Centre, India*

## Chromium VI-free technologies (I)

### Guillaumet 1

- 8:30 **Substitute for Hard Chrome & need for new thermal spray powder**  
C. Poupon - *AIRBUS, France*
- 8:55 **Conversion coatings : Unveiling the link between structure and corrosion resistance**  
A. Schut - *Axcentive, Belgium*, D. Cossement - *Materia Nova, Belgium*
- 9:20 **Novel Electroless Deposited NiP-amorphous Boron Dispersion Coating as Alternative to Boriding and Hard Chromium Coating**  
N-A. Binti Omar, F. Kster, F. Hahn - *University of Applied Science Mittweida, Germany*, A. Bund, *Technische Universität Ilmenau, Germany*
- 9:45 **Substitution of hexavalent chromium substances in the manufacturing processes of the LEMO Group**  
C. Z. Torma - *LEMO SA, Switzerland*

## Test and Characterization

### Guillaumet 2

- 08:30 **NDT methods for wet coating thickness measurements**  
H. Petitpré, Q. Anh Vu, F. Zhang, J. Coquelle - *CETIM, France*
- 08:55 **New insights in evaluation of hydrogen incorporation in electroplated coatings**  
A. Younis, R. Le Barbenchon, S. Cohendoz, C. Rebere R. Milet, F. Fariaut, J. Frayret, C. Savall, J. Creus - *LaSIE, La Rochelle Université, France*
- 09:20 **Which technique to use for precisely measuring the carbon content in carburized steels?**  
H. Ouardani, Y. Pinot, D. Lagadrillere, A. Vaucheret, P. Jacquet - *Ecole Nationale Supérieure d'Arts et Métiers - Cluny, France*
- 09:45 **The rise of SEM-EBSD - From an academic tool to an efficient characterization device for the industry**  
M. Labonne, R. Collet, D. Maisonnette - *CETIM, France*
- 10:10 **Break - Panel discussion on the forum - Poster session**

## Heat Treatment / Steel (I)

### Foyer Saint Exupéry

- 11:15 **Enhancing Q&T Steels Toughness: Precision Crafting of Nano Scale Cu-Precipitates by Optimizing Heat Treatment Parameters**  
K. Dev Sharma, A. Karmakar, *Indian Institute of Technology Roorkee, India*
- 11:40 **Ferrite-pearlite transformation time reduction strategy for the in-line heat treatment in restricted layout space forges**  
G. Artola, I. Berriozabalgoitia, A. Natxiondo - *Azterlan, Basque Research and Technology Alliance (BRTA), Spain*
- 12:05 **Strengthening mechanism and fracture characteristics of massive ferrite formed in heat-treated commercial grade interstitial-free steel**  
S. Yadav, S. Ghosh - *Indian Institute of Technology Roorkee, India*

## Chromium VI-free technologies (II)

### Guillaumet 1

- 11:15 **Overall Thales process substitution and qualification of Supplier – Focus on HVOF vs Hard chromium**  
F. Duhamel - *Thales, France*

- 11:40 **Substitution for chemical conversion on aluminium alloys 2000 and 7000 series : contribution of LASER stripping as surface preparation**  
R. Ottenio - *SAFRAN Electronics & Defense, France*
- 12:05 **Towards more resilient, sustainable, competitive and intelligent electrochemical surface treatments**  
M. Lekka, N. Imaz, A. García, J. Ochoa, E. García-Lecina - *CIDETEC, Spain*, J. Frayret, R. Esmlilaire - *INEOSURF, France*

## Numerical simulation in Heat Treatment

### Guillaumet 2

- 11:15 **A sustainable approach to decarbonization in industrial heat treatment processes**  
S. El Aouad, L. Sardo, L. Ratte, G. Lissoni - *Sciences Computers Consultants, France*
- 11:40 **Polymer quenching of an industrial aluminum aircraft component: analysis of process conditions on distortion control**  
M. Moreno, P. Lasnes, S. Andrietti - *Transvalor SA, France*, O. Skalli - *LISI Automotive, France*, M. Dulac, *Quaker Houghton, France*
- 12:05 **Simplified modelling approaches for thermochemical treatments and ways to facilitate their implementation**  
D. Herisson, G-F. Pulido Mariño - *Safran Tech, France*, Charlie Poulat - *Safran Transmission Systems, France*
- 12:30 **Lunch**

## Heat Treatment / Powder metal parts

### Foyer Saint Exupéry

- 14:00 **Effect of yttria contents on grain coarsening kinetics and mechanical properties of spark plasma sintered 15Cr oxide dispersion strengthened (ODS) steel**  
L. Verma, V. Dabhade - *Indian Institute of Technology Roorkee, India*
- 14:25 **Hot Isostatic Pressing (HIP) of parts for aero engine applications**  
B. Ruttert - *Aalberts Surface Technologies, Netherlands*
- 14:50 **Mechanical properties, microstructure and precipitation behaviour of powder forged IN718 superalloy after heat treatment**  
S. Digambar Gaikwad, V. Dabhade - *Institute of Technology Roorkee, India*, S.v.s N. Murty, S. Manwatkar - *Vikram Sarabhai Space Centre (VSSC), India*

## Innovative coatings for corrosion, wear, tribology, ...(I)

### Guillaumet 1

- 14:00 **Advancements in Surface Alloying Methods to Safeguard High-Temperature Exposed Platinum/Rhodium Die Surfaces**  
M. Mesbah, V. Vitry - *University of Mons, Belgium*, F. Monteverde - *Materia Nova, Belgium*
- 14:25 **Composite Electroless Nickel Coatings for Oil and Gas Applications**  
P. Viviani, F. Lissandrello, L. Magagnin - *Politecnico di Milano, Italy*
- 14:50 **Corrosion properties in conditions simulating the deep geological disposal of composite ZnAl Cold Spray coatings for the protection of carbon steel overpack of radioactive waste**  
A. Martin, J. Creus, P. Refait - *LaSIE, La Rochelle Université, France*, V. Maillot, G. Charrier, D. Crusset - *ANDRA, France*, F. Gouraud - *CITRA, France*, C. Verdy - *UTBM, France*

## Induction Heat Treatment

### Guillaumet 2

- 14:00 **Advantages of induction technology for heat treatment process**  
J-P. Furmann - *Fives Celes, France*

- 14:25 **Induction hardening for aerospace components: challenges and contributions of numerical simulation**  
K. Traidi - *Safran Tech, France*
- 14:50 **Metallurgical impact of simultaneous dual-frequency induction hardening on gears**  
P-E. Aba-Perea - *IRT M2P, France*
- 15:15 **Break - Panel discussion on the forum - Poster session**

## Thermochemical treatments (III)

### Foyer Saint Exupéry

- 16:15 **Thermodynamics of Fe–N–M systems in the context of nitriding**  
A. Leineweber - *Institute of Materials Science, TU Bergakademie Freiberg, Germany*
- 16:40 **Liquid Nitrocarburizing with low environmental impact for tribological applications: Development and continuous improvement of a sustainable thermochemical treatment through Life Cycle Assessment method**  
P. Grangier, V. Monteux - *HEF, France*
- 17:05 **Influence of the initial microstructure on nitriding Fe-Si electrical steel**  
F. Delarbre, S. Jegou, L. Barrallier - *Arts et Métiers Sciences et Technologies, France*, M. Teodorescu - *Thyssenkrupp Electrical Steel UGO S.A.S, France*
- 17:30 **Impact of surface layer changes due to the machining process on the nitriding response of forging tools**  
T. Oelker, N. Guba, T. Hüsemann, S. Hoja - *Leibniz-Institut für Werkstofforientierte Technologien - IWT*
- 17:55 **Microstructural characterization of expanded austenite in plasma nitrocarburized 316L stainless steel under distinct surface finish**  
M. Bolan, S. Jafarpour, S. Martin, A. Dalke, H. Biermann, A. Leineweber - *TU Bergakademie Freiberg, Germany*

## Innovative coatings for corrosion, wear, tribology,...(II)

### Guillaumet 1

- 16:15 **CVD Tungsten Carbide Hardide Coatings for a Sustainable Future in Industry and Transport**  
Y. Zhuk - *Hardide Coatings, UK*
- 16:40 **Development and optimisation of titanium dry-anodising process**  
P. Santamaría, M. Belen García, A. Valencia-Ramírez, M. Lekka - *CIDETEC, Spain*, A. Valencia, C. Radogna, J. Josep Roa - *Steros - GPA Innovative, Spain*, B. Reschenhofer - *Bionic Surface Technologies, Austria*
- 17:05 **Development of a sol-gel based coating for aluminium fire protection**  
J. Garcia, M. Busquet - *IRT Saint Exupéry, France*
- 17:30 **Atmospheric Pressure Plasma Coating deposition of Functionalized thin films for Anticorrosion**  
D. Bensalem, L. Buske, M. Buske - *Plasmatreat, Germany*
- 17:55 **Thermal spray alumina coatings with segmented torches, economical benefit?**  
M. Sleiman, G. Darut, M-P. Planche, R. Seulin - *UTBM Université de Technologie de Belfort Montbéliard, France*, J-J. Gon-zalez, P. Freton - *Laboratoire plasma et conversion d'énergie, France*, A. Salito, M. Rosli - *Gulphi AG, Switzerland*

## Treatment of Additive Manufactured Parts

### Guillaumet 2

- 16:15 **A novel approach to develop a shorter heat treatment under hot isostatic pressure for Electron Beam Melted Alloy 718**  
A. Ghorpade, U. Prakash - *Indian Institute of Technology Roorkee, India*, S. Joshi - *University West, India*
- 16:40 **Development of Heat Treatment Processes for Additively Manufactured Aluminum Alloys in Hydrogen-Powered Aircraft**  
S. Hoja, K. Hantzschke - *Leibniz-Institut für Werkstofforientierte Technologien - IWT, Germany*, A. Vogelpoth, L. Schüler- Fraunhofer - *Institut für Lasertechnik ILT3, Germany*, C. Schrock, F. Syassen - *Airbus Operations, Germany*, F. Palm - *Airbus Defence and Space, Germany*



- 17:05 **Devising of an integrated Hot Isostatic Pressing (HIP) heat treatment for additive manufactured nickel based  $\gamma/\gamma'$  alloys : relevant parameters and material characteristics**  
J.-M. Auger, J. Hugues, A. Prillieux, S. Perusin, M. Ravaioli - *IRT St Exupéry, France*
- 17:30 **Surface finishing technologies for complex additively manufactured metallic parts**  
A. Renaud, S. Parriaux, J. Tardelli - *IRT M2P, France*
- 17:55 **Simulation of chemical polishing for additive manufacturing part: a multiscale and multiphysics approach**  
A. Boucher, B. Fedi, J. Schoenleber - *HIVELIX, France*
- 19:30 **Gala evening at Aeroscopia Museum**

## Friday, June 7

### Keynote Lecture

#### Foyer Saint Exupéry

- 08:30 **How can new generation of anti-stiction compounds help resolving noise/wear issues in Landing Gears**  
L. Tizac - *Airbus, France*

### Heat Treatment Steels (II)

#### Foyer Saint Exupéry

- 09:00 **Influence of the tempering temperature on the metallurgical and surface characteristics of a low alloyed low carbon steel used in mobile flange for automotive industry**  
M. Marnier, Thomas Chiavazza - *Forvia, France*
- 09:25 **Cryogenic Treatment of Metals : Recent developments and implementation in industrial heat treatment processes**  
M. Amine Jamli - *Air liquide France Industrie, France*
- 09:50 **Role of Cerium on Intricacies of deformed state and Softening Kinetics of Low Carbon Steels**  
C. Kadgaye - *Indian Institute of Technology Roorkee, India*
- 10:15 **Impact of heat treatments of 20MnB5, C18 and 42CrMo4 on the surface energy and on the friction response**  
E. Houara Komba, A. Achille, V. Leprince - *Forvia Automotive Seating, France*

### Innovative coatings for corrosion, wear, tribology,...(III)

#### Guillaumet 1

- 09:00 **Evaluation of icephobics coatings for aeronautics applications**  
R. Noiville - *SAFRAN TECH, France*
- 09:25 **Wear Properties of Tungsten Carbide Cobalt (WC-Co) Hardmetal Materials After Boriding Process**  
K. Öztürk, B. Uyulgan - *Dokuz Eylül Üniversitesi, Turkey*, U. İnce - *Norm İzmir, Turkey*
- 09:50 **Multifunctional nanocomposite coatings: towards tribological active coatings from a process that respects people and the environment**  
A. Aussonne - *Université Paul Sabatier, Toulouse, France*
- 10:15 **Influence of Electrochemical texturing of 316L Stainless Steel on tribological properties**  
C. Regent, M-L. Doche, L. Hallez - *UTINAM, Université de Franche Comté, France*, V. Vignal, B. Vuillemin - *Université de Bourgogne, France*, M. Assoul, X. Roizard - *FEMTO, Université de Franche Comté, France*

## Electrical and thermal connectivity enhancement (I)

### Guillaumet 2

- 09:00 **Cyanide-free silver alloys electroplating for electrical connectivity**  
Q. Orecchioni , M-P Gigandet, J-Y. Hihn - *UTINAM, Université Franche-Comté, France*, J. Tardelli - *IRT M2P, France*
- 09:25 **A New Hard Silver Alloy plating process for High Power connector**  
M. Genet - *Metalor, France*
- 09:50 **Advanced silver-graphite dispersion coating – A longlasting solution for electric connector with extraordinary tribological properties**  
M. Lahsini - *Schloetter, France*
- 10:40 **Break**

## Heat Treatment (Non-Ferrous)

### Foyer Saint Exupéry

- 11:00 **Effect of ageing conditions on microstructure and mechanical properties in the Ti-5553 titanium alloy: effect of initial microstructure, heating rate and thermal cycling**  
M. Dehmas, A. Ismail, A. Freulon, J. Huez – *CIRIMAT Université Paul Sabatier, Toulouse - France*
- 11:25 **Controlling Distortion and Residual Stresses in Heat Treated Aluminum Components for Automotive and Aerospace**  
D. Mackenzie - *Quaker Houghton, USA*
- 11:50 **Flux-free brazing of aluminum alloys using graphite vacuum furnace**  
A. Hadian, A. Buchwalder, *University of Applied Sciences Northwestern Switzerland, Switzerland*, B. Kuntzmann, *Listemann AG, Switzerland*, S. Puidokas, *Eurofins Qualitech AG, Switzerland*
- 12:15 **Phase transformation kinetics in Ti 575 titanium alloy during heat treatment: Impact of cooling rate from solution annealing during the subsequent ageing**  
E. Hoareau, B. Viguier, M. Dehmas - *CIRIMAT, Université Paul Sabatier, France*, T. Billot, C. Deleuze - *Safran Landing Systems, France*, S. Andrieu - *Safran Additive Manufacturing Campus, France*, M. Descoins, K. Hoummada - *Aix-Marseille Université, France*

## Surface Cleaning & Preparation

### Guillaumet 1

- 11:00 **Surface modification and precursor plasma deposition to improve adhesion**  
C. Faure, S. Kirchner, L. Ferres - *IRT St Exupery, France*, C. Debras - *Thales Alenia Space, France*, M. Peron - *ArianeGroup, France*, N. Cu villier - *Safran Composites, France*, T. Balutch - *Naval Group, France*
- 11:25 **Advantages of cleaning with various ultrasonic frequencies**  
R. Robert, S. Chevallier - *KLN Ultraschall, Germany*
- 11:50 **New Laser surface solution for cleaning and functionalization onto fatigue life component**  
J. Duchazeaubeneix, L. Besnault - *MELIAD, France*
- 12:15 **Towards a reliable laser process for surface preparation before bonding**  
F. Crestey, S. Kirchner, J. Lecomte, L. Ferres - *IRT St Exupery, France*, A. Fernandez - *Airbus, Spain*, C. Debras - *Thales Alenia Space, France*, M. Peron - *ArianeGroup, France*, N. Cu villier - *Safran Composites, France*, T. Balutch - *Naval Group, France*

## Electrical and thermal connectivity enhancement (II)

### Guillaumet 2

- 11:00 **Assembly of power semiconductor components by thermocompression of porous electrochemical copper films**  
J. Schoenleber, M-P. Gigandet, J-Y. Hihn - *UTINAM, Université de Franche Comté, France*, G. Janod, Y. Avenas, L. Chachay, J-M. Missiaen, D. Bouvard - *Université Grenoble Alpes, France*, R. Khazaka - *SafranTech, France*
- 11:25 **Cyanides and boric acid-free silver electrodeposition processes evaluation**  
W. Bedjou - *IRT M2P, France*

11:50	Surface coatings of powders, application to the electronic field with the manufacture of innovative multi-material solder balls by electroless plating. S. Bucher - IREIS, France
12:15	Tinned connectors in the automotive industry: Plated Tin, HDT, reflow...their impact on material properties D. Comte, A. Franchini - Amphenol CS, France
12:40	Closing cocktail

## Industrial visits

From 13:30 on Friday, June 7

**6 tours are offered to Congress participants :**  
(booking required, please note limited places)

- AIRBUS, St Eloi  
Engine pylons design and manufacturing
- AIRBUS, Laboratoire Matériaux et Mécanique, Blagnac\*  
Tribology and structure dynamics
- IRT St Exupery, Institut de recherche technologique, Toulouse\*
- SAFRAN POWER UNIT, Toulouse\*  
Auxiliary powers systems manufacturing
- D.G.A. Direction Générale de l'Armement Techniques Aéronautiques, Balma\*  
Test equipment
- SAFRAN NACELLES, Colomiers\*

\*Bus transport from Toulouse and back will be provided.

More details on the tours at: <https://echt2024.a3ts.org/fr/>



## General information / Meals and reception

### Centre Pierre Baudis

11 Esp. Compans Caffarelli, Toulouse

#### Tuesday, June 4

**18:00 to 20:00**

Welcome reception

#### Wednesday, June 5

**12:30 to 14:00**

Lunch

**18:00 to 19:00**

Cocktail reception on the trade show

#### Thursday, June 6

**12:30 to 14:00**

Lunch

**19:30**

A3TS gala evening

#### Friday, June 7

**12:30 to 14:00**

Closing cocktail

# How to register ?

Registrations can be made :

- Online: <https://echt2024.a3ts.org/fr/>

- By completing the registration form below. To be returned by email: [a3ts@a3ts.org](mailto:a3ts@a3ts.org) or by post: A3TS,  
71 rue Lafayette, 75009 Paris France

Payments must be made before the event by bank transfer or by card directly online on the congress page of the A3TS website. A3TS reserves the right to refuse reimbursement of participation fees for cancellation requests received after May 12, 2024.

## Register Form

Last name : .....

First name : .....

Position : .....

Compagny : .....

Address : .....

Postal code : .....

City : .....

Country : .....

Tel.: .....

E-mail : .....

### Gala evening, Thursday June 6

I confirm my attendance

### Industrial visits on Friday June 7 (afternoon)

Choose your visit by numbering them from 1 to 5 according to your preferences.

..... AIRBUS SAINT ELOI

..... AIRBUS Matériaux et Mécanique laboratory

..... IRT Saint Exupéry (technological research institute)

..... Safran Power Unit

..... D.G.A. Direction Générale de l'Armement (aeronautical techniques)

..... Safran Colomiers

### A3TS member

520 € excl. VAT\* (Registration BEFORE April 14, 2024)

640 € excl. VAT\* (Registration AFTER April 14, 2024)

### Non-member

640 € excl. VAT\* (Registration BEFORE April 14, 2024)

770 € excl. VAT\* (Registration AFTER April 14, 2024)

Speaker : 400 € excl. VAT\*

Student and retiree: 300 € excl. VAT  
(Registration BEFORE April 14, 2024)

Student and retiree: 340 € excl. VAT  
(Registration AFTER April 14, 2024)

Accompanying person at gala dinner: 125 € excl. VAT

\* The A3TS annual membership fee is 79.17 € excluding VAT.

The fee includes access to the ECHT 2024 and A3TS Congress conferences with documentation, the exhibition, the cocktail reception on June 5, lunches, the gala evening on June 6 and transfers to the industrial visits on the afternoon of June 7.

I will pay the fees:

**By bank transfer:**

IBAN : FR76 3005 6000 4000 4054 1676 192

BIC : CCFRFRPP

**On receipt of invoice**

Date and signature:



# How do I get there?

The Pierre Baudis Convention Center: an event complex in the heart of Toulouse

The Centre de Congrès Pierre Baudis is an emblematic venue in the Pink City, offering a modern, elegant setting for all your business events. Ideally located in the Compans Caffarelli business district, in the immediate vicinity of transport, accommodation and shops, its geographical position allows you to combine business meetings with sightseeing.

## Welcome reception:

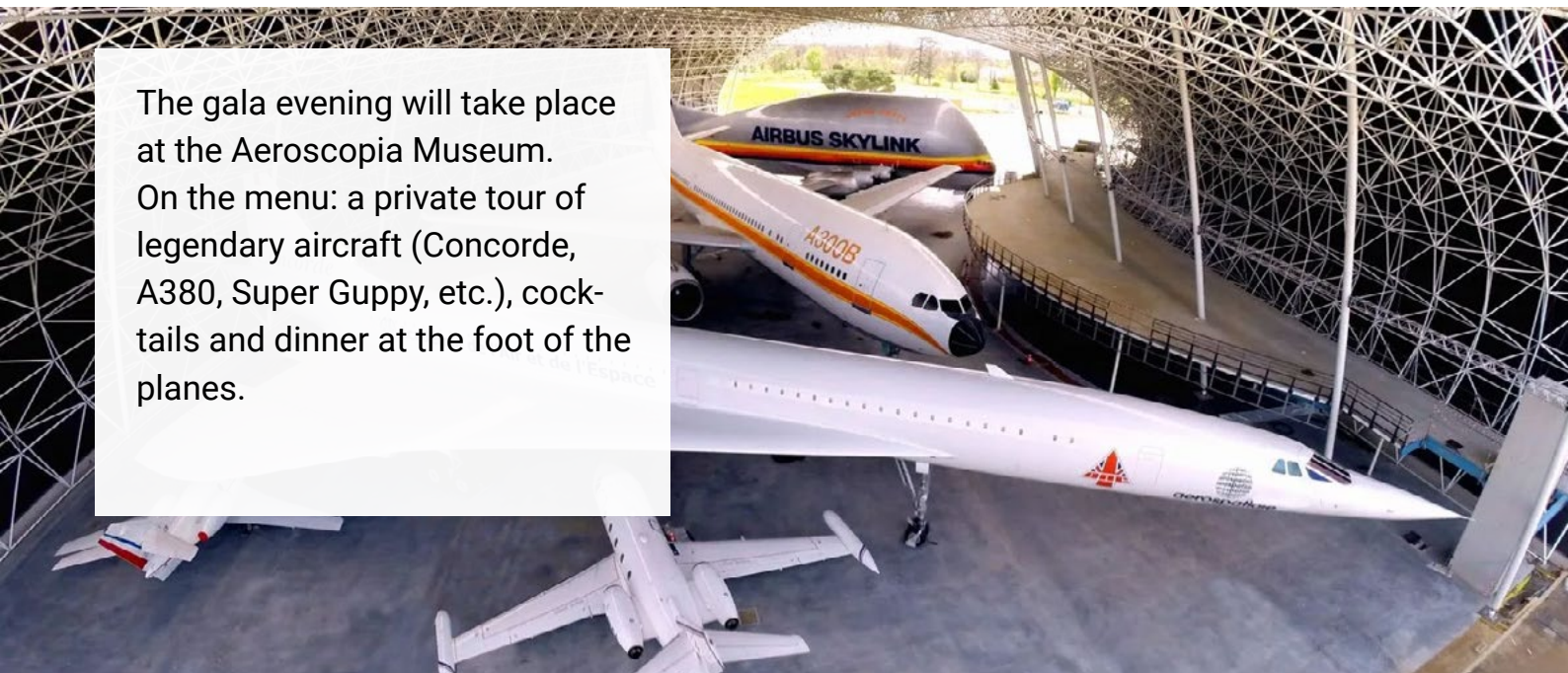
Tuesday, June 4, 2024 - 18:00, Centre Pierre Baudis, 11 Esp. Compans Caffarelli, 31000 Toulouse

## Gala evening:

Thursday, June 6, 2024 -19:30

Aeroscopia Museum, Address: 1 All. André Turcat, 31700 Blagnac

The gala evening will take place at the Aeroscopia Museum. On the menu: a private tour of legendary aircraft (Concorde, A380, Super Guppy, etc.), cocktails and dinner at the foot of the planes.



### **By metro, bus, streetcar**

Stop Compans-Caffarelli :

- Metro line B
- Bus lines 14 / 45 / 63
- Line L1
- Airport and bus station shuttles

### **By train**

Toulouse Matabiau SNCF train station  
Direct access in 15 min

### **By car**

Compans Caffarelli parking lot  
direct access

### **By plane**

Toulouse Blagnac International Airport  
8 km away  
Direct access to airport shuttle



Our sponsors

