10th CIRP Conference on High Performance Cutting

June 17-19, 2026 - Cluny, France

PROGRAM ON TUESDAY, JUNE 16th

5.00 - 8.00 pm	Early Registration
5.00 -7.00 pm	Lab Tour
5.00 - 9.00 pm	Welcome Event
9.00 pm	Shuttle Departure to Mâcon

PROGRAM ON WEDNESDAY, JUNE 17th

8.30 - 8.45 am	Registration/Coffee (Cloister)		
9.00 - 9.30 am	Opening Session (Theater) Pr. Ivan Iordanoff, Dean of Research, Arts et Métiers Pr. Radjesvarane Alexandre, Director of Cluny Campus, Arts et Métiers Pr. Gérard Poulachon, Chairman of HPC 2026		
09.30 - 10.00 am	Advancing Machining Through Process-Driven Innovations Dr.-Ing. Marc-Andre Dittrich (DMG MORI)		
10.00 - 10.30 am	The Myth of Sustainable Machining Pr. Alborz Shokrani (Bath University)		
10.30 - 11.00 am	Nuclear Strategic Orientations in High Performance Machining Dr.-Ing. Cédric Bonnet and Dr.-Ing. Édouard Ducroux (Framatome)		
11.00 - 11.45 am	Coffee Break		
	MERCHANT ROOM	TAYLOR AMPHITHEATER	ARMAREGO AMPHITHEATER
	Cryogenic Machining	Cutting Fluids	Tool Wear and Machinability
11.45 - 12.10 am	Slot milling on cylindrical surface - geometrical modelling György Póka	Geometric simulation of process and tool design for high-speed whirling and high-speed whirl-milling of end mill geometries Emma Punsmann; Jannik Schwalm; Volker Schulze	Indirect in-process tool wear monitoring through digital twin integration Jakub Ullrich; Matěj Sulitka; Petr Kolář; Petr Petráček; Jiří Falta; Yilin He
12.10 - 12.35 am	Allowance optimization for forged Pelton turbine bucket based on point cloud registration and constrained variance minimization Xiangrui Kong; Yuyang Tang; Hongguang Liu; Jun Zhang	Influence of tool kinematics on process performance: turning vs. spinning Mohammad Rabiey; Cunti Gian Marco; Marino Garobbio	A novel in-situ measurement strategy for orthogonal cutting forces Frédéric Rossi; Jihane Arbi; Camille Vanparys
12.35 - 2.00 pm	Lunch		

PROGRAM ON WEDNESDAY, JUNE 17th

	MERCHANT ROOM	TAYLOR AMPHITHEATER	ARMAREGO AMPHITHEATER
	Cryogenic Machining	**Cutting Fluids**	**Tool Wear and Machinability**
2.00 - 2.25 pm	**Investigation of high-frequency pulsed carbon dioxide based cryogenic minimum quantity lubrication for milling 1.4404 steel (AISI 316L)** Jan Selzam; Trixi Meier; Nico Hanenkamp	**Performance evaluation of an oil-free cutting fluid in tapping** Thibaud Walker; Michael Fontaine; Xavier Roizard; Alexandre Gilbin; Fabrice Lallemand	**Machining performance of cermets with alternative binders in milling** Vikas Babu Kumba Premkumar; Annaelle Mouche; Rachid M'Saoubi; Volodymyr Bushlya
2.25 - 2.50 pm	**Performance of various coatings on tool life in titanium cryogenic machining** Rachele Bertolini; Luca Pezzato; Valentina Zin; Stefania Bruschi	**Characterization of the lubricating effect of quasicrystalline powders in orthogonal cutting** Conrad Breer; Jannis Saelzer; Dirk Biermann	**Binder Jetting process chain optimization for M3 High-Speed tool steel** Marvin Dornick; Frederik Zanger
2.50 - 3.15 pm	**Thermal investigation of sCO2 flow cooling ability in a thin cylindrical tube** Maha El Nahas; Thomas Pottier; Jean-Jacques Létourneau; Yann Landon; Vincent Wagner	**Investigation of an in-situ measurement method based on fluorescence spectroscopy for the rapid detection of microorganisms in metalworking fluids** Jan Reichinger; Trixi Meier; Nico Hanenkamp	**Towards predictive identification of plastic deformation of wc–co tools in high-speed machining, part 1: multi-sensor approach for on set detection** Xenia Stergiopoulou; Gautam Sridhar; Volodymyr Bushlya; Oleksandr Gutnichenko; Andrii Hrechuk; Rachid M'Saoubi
3.15 - 3.40 pm	**Machinability of lead-free brass alloys with cryogenic minimum quantity lubrication** Andreas Röckelein; Jan Harald Selzam; Trixi Meier; Stefan Brehm; Nico Hanenkamp	**Soybean oil-based nanofluid-assisted MQL for sustainable drilling of LPBF Ti6Al4V: effects on tool wear and surface integrity** Matteo Tognazzo; Rachele Bertolini; Andrea Ghiotti; Stefania Bruschi	**Towards predictive identification of plastic deformation of wc–co tools in high-speed machining, part 2: machining methodologies and characterization** Gautam Sridhar; Xenia Stergiopoulou; Volodymyr Bushlya; Andrii Hrechuk; Rachid M'Saoubi; Oleksandr Gutnichenko
3.40 - 4.05 pm		**Hybrid digital twin and inverse force identification for orthogonal cutting cast irons at dry and MQL conditions** Rebecka Lindvall; Henrik Feuk; Oleksandr Gutnichenko	**Investigation of the influence of process parameters and cutting tool materials on the tool wear in hard skiving of internal gears** Charalampos Alexopoulos; Mareike Davidovic; Thomas Bergs
4.05 - 4.45 pm	Coffee Break		
	Surface Integrity	**Thermal Effects**	**Dynamic and Stability**
4.45 - 5.10 pm	**Comparative analysis of ceramic and cbn tools for surface integrity in face turning of Inconel 718** Anna Kibireva, M.Sc.; Hui Liu; Markus Meurer; Thomas Bergs	**Effects of cutting speed and temperature on thermo-mechanical loads and friction in orthogonal cutting of Ti-6Al-4V** Mustapha Abouridouane; Thomas Bergs; Markus Meurer; Guido Wirtz	**A discrete-element approach to model vibro-impact damping in boring bars** Arjun Patel; Kokkonda Vikas; Mohit Law
5.10 - 5.35 pm	**Characterization of surface integrity induced by turning and burnishing processes in A2024 aluminium alloy** Rosalinda Solis; Raphaël Lorain; Thierry André; Frédéric Valiorgue; Joel Rech	**Efficient prediction of long-term thermal trends and peak temperatures in milling using a hybrid adaptive-superposition approach** Tim Göttlich; Simon Mäge; Simon Winter; Hui Liu; Thomas Bergs; Wilko Rohlfs	**Sensor and estimator co-optimization for dynamic force measurement** Max Richter; Kamil Güzel; Adrian Gonzales de Mendoza; Hans-Christian Möhring
5.35 - 6.00 pm	**Machinability and grindability of high-carbon tool steel manufactured by powder bed fusion electron beam** Seyed B. Hosseini; Tomas Gustavsson; Jonathan Ekdal; Petrus Dahlqvist; Daniel Norin Johansson; Amir Malakizadi	**Thermal impact of the tool geometry on the milling of bone** Lisa Marie Rickerts; Kai Koch; Tassilo-Maria Schimmelpfennig; Hermann Seitz	**A comparative study of numerical simulations and stability analysis for a classical case of regenerative chatter in milling** Grigorii Altshul; Lorong Philippe; Guskov Mikhail
6.00 - 6.25 pm	**3D numerical modelling of residual stresses induced in longitudinal turning of a TA6V titanium alloy** Joel Rech; Marc Raffestin; Mariem Yaich; Mathieu Girinon; Frédéric Valiorgue	**Thermo-mechanical decoupling at the tool-workpiece interface: A comparative study of coating architectures in orthogonal cutting of nickel 718 alloy** Cristian Fabian Pérez-Salinas; Filipe Fernandes; Pablo Fernandez de Lucio; Norberto Lopez de Lacalle; Robson Bruno Dutra Pereira	**Tool condition diagnosis in honeycomb core milling: a deep transfer learning approach using vibration and acoustic data** Ivan Vazquez; Dominique Knittel; Hamid Makich; Mohammed Nouari
6.25 - 6.50 pm	**A holistic concept for the numerical determination of residual stresses during heat treatment and hard turning of case-hardened steel** Pascal Behrens; Genannt Wäcken; Oliver Schenk; Markus Meurer; Christoph Broeckmann; Thomas Bergs	**Numerical investigations of the thermal behaviour of a circular sawing process with internal coolant supply** Jan Stegmann; Johannes Ramme; Stephan Kabelac; Hans-Christian Möhring	**DIGICUT: a computational tool for machining dynamics prediction and process optimisation** Jesús David Chaux; Patxi X. Aristimuño Osoro; Oier Etxebeste Rodrigo; Pedro J. Arrazola
7.15 pm	Shuttle Departure to Mâcon		

PROGRAM ON THURSDAY, JUNE 18th

	MERCHANT ROOM	TAYLOR AMPHITHEATER	ARMAREGO AMPHITHEATER
	Electro Discharge Machining	**Dynamic and Stability**	**Tool Wear and Machinability**
8.30 - 8.55 am	**Comparison of milling and SEDM manufacturing processes for the production of BPP-forming tools** Alexander Fischer; Timm Petersen; Jan Sommer; Rainer Horstkotte; Tim Herrig; Viktor Rudel; Thomas Bergs	**Design of a damped tool holder to enhance the cutting capacity of slender turning tools** Josu Peña; Asier Astarloa; Aitor Olarra; Jokin Muñoa; Maria Garcia; Harkaitz Urreta; Josu Aguirrebeitia	**Tool wear analysis of coated tools as a basis for predictive modelling when turning** Maximilian Berndt; Hagen Schmidt; Lars Müller; Eberhard Kerscher; Jörg Seewig; Benjamin Kirsch
8.55 - 9.20 am	**Prediction of wire breakage in wire electrical discharge machining by using a thermomechanical damage model** Eduardo Gonzalez-Sanchez; Nicolas Muñoz; Konrad Wegener; Davide Beretta; Amir Malakizadi;	**Process stabilization through cryogenically generated support structures and its impact on dimensional accuracy in milling thin-walled components** Simon Jaquet; Jonas Baumann; Dirk Biermann	**A data label expansion strategy for tool wear prediction through data-driven approaches** Jiaxing Yan; Yukun Xue; Yi Zhong; Lele Bai; Hongguang Liu; Yuyang Tang; Jun Zhang
09.20 - 9.45 am	**Investigation of the influence of tool geometry in high-pressure wire electrochemical machining with internal radial flushing on process stability and productivity** Jakub Reliszka; Timm Petersen; Tim Herrig; Andreas Klink; Thomas Bergs; Kai Oßwald	**A physical interpration of vibration frequency and amplitude ratios for waviness prediction in turning** Monica Gil-Inchaurza; Xavier Beudaert; Jokin Munoa; Jose Antonio Sanchez; Maria Garcia-Moreno; Zoltan Dombovari	**Determination of transient and nonlinear tool wear development in orthogonal turning of AISI 304 steel** Pascal Volke; Justin Kopp; Jannis Saelzer; Andreas Zabel; Frank Walther
9.45 - 10.10 am	**Analysis of the influence of discharge distribution and wire movement on wire breaks during WEDM** Jan Wittenburg; Timm Petersen; Tim Herrig; Andreas Klink; Thomas Bergs	**Enhancing readability of the spectral correlation function using multitaper reassignment for milling vibration feature extraction** Jonatan Persson; Maria Åkesson; Gautam Sridhar; Oleksandr Gutnichenko; Maria Sandsten	**Surface integrity assessment of post-treated Al_2O_3/TiCN coatings for cutting tools applications** Yining Liu; Danijel Babic; Hengfang Zhang; Jonas Siljat; Vitaliy Kazymyrovytch; Rachid M Saoubi; Emilio Jimenez-Pique; Luis Miguel Llanes; Giselle Ramirez
10.10 - 11.00 am	Coffee Break		
	Monitoring and Diagnostics	**Dynamic and Stability**	**Cutting fundamentals**
11.00 - 11.25 am	**Multi-sensor analysis of tool wear with integration of direct and indirect sensors** Ehsan Karimi; Jannik Schwalm; Volker Schulze	**Tool-tip frequency response function prediction of a 3-PRRU parallel spindle head based on Kriging interpolation** Yutong Liang; Yuyang Tang; Yunpeng Dong; Jun Zhang	**Numerical and experimental calibration of a friction model considering heat transfer** Nicklas Gerhard; Gustavo Tambarussi Zucoloto; Markus Meurer; Thomas Bergs
11.25 - 11.50 am	**Monitoring initial tool damage of PcBN tools during hard milling of Vanadis 4E using acoustic emission** Gautam Sridhar; Jonatan Persson; Maria Sandsten; Sandra Gordon Pozuelo; Oleksandr Gutnichenko	**Physics-informed ml-based chatter detection for thin-walled milling** Aakash Singh; Michal Slupczynski; Michal Kováč; Viktor Rudel; Stefan Decker; Thomas Bergs	**Enhanced orthogonal finishing of Ti6Al4V using laser-ablated cutting tool geometries** Fabian Kneubühler; Varun Urundolil Kumaran; Nanyuan Zhang; Hagen Klippel; Konrad Wegener; Amir Malakizadi
11.50 - 12.15 am	**Novel approach for detection of initial tool degradation from hard milling of Vanadis 4E using coated PcBN inserts** Maria Sandsten; Jonatan Persson; Maria Åkesson; Gautam Sridhar; Sandra Gordon Pozuelo; Oleksandr Gutnichenko	**Process monitoring challenges in five-axis ball-end milling of flexible parts: an experimental perspective** Lele Bai; Nagore Villarrazo; Luis Norberto López de Lacalle; Octavio Pereir; Jun Wang; Jun Zhang	**Elucidation of the machining mechanism of 35% nickel-austenitic spheroidal graphite cast iron by two-dimensional shaper cutting** Takeru Sato; Takeru Sato; Mitsuyoshi Nomura; Hiroshi Saito; Takashi Yamakawa; Yuki Shishikura; Tomoya Sakai
12.15 - 12.40 am	**Acoustic emission-based characterization of wear progression in coated cutting tools when turning** Hagen Schmidt; Maximilian Berndt; Lars Müller; Eberhard Kerscher; Benjamin Kirsch; Jörg Seewig		**Development of a digital twin for predicting burr height during axial drilling** Silvia Carvalho; Yann Landon; Anna Carla Araujo
12.40 - 2.00 pm	Lunch		

PROGRAM ON THURSDAY, JUNE 18th

	MERCHANT ROOM	TAYLOR AMPHITHEATER	ARMAREGO AMPHITHEATER
	Thermal Effects & Deformation	**Grinding and Abrasive Processes**	**Tool Wear and Machinability**
2.00 - 2.25 pm	**A comparative study on thermal characteristics and tool wear behavior in conventional and laser-assisted machining of γ-TiAl intermetallics** Shijia Shi; Hongguang LIU; Xin Liu; Yuyang Tang; Jun Zhang; Wanhua Zhao	**Effects of actual dressing depth of cut of corundum wheels and grinding speed ratio on workpiece surface quality and lead pattern** Maria Garcia-Moreno; Jorge Alvarez; David Barrenetxea; Monica Gil-Inchaurza; Leire Godino	**Performance analysis of NbC-based cutting materials for dry cylindrical turning of carbon steel** Christoph Schneider; Eckart Uhlmann; Jens Guenster; Fabian Beer
2.25 - 2.50 pm	**Measurement and modeling of cutting temperature in the rock cutting process** La-Xing Ye; Oleksandr Gutnichenko; Vyacheslav Kryzhanivskyy; Amanda McKie; Anna Böhm; Susanne Norgren; Rachid M'Saoubi; Volodymyr Bushlya	**Experimental investigation of awjm of circular-shaped pockets using eco-friendly abrasives** Nikolaos E. Karkalos; Panagiotis Karmiris-Obratański; Angelos P. Markopoulos	**Material and modeling and cutting force coefficient for miling of A390 aluninium alloy** Ravi Bilkhu; Gaetano Massimo Pittala; Wei Ji; Ashwin Devotta
2.50 - 3.15 pm	**Multiscale thermomechanical tool-load prediction for milling processes integrated into CAM environments** Hui Liu; Tim Göttlich; Simon Winter; Markus Meurer; Wilko Rohlfs; Thomas Bergs	**Analogy dressing investigation for the evaluation of the behavior of cold gas sprayed cbn-copper coatings for future grinding applications** Juan Sebastian Palomeque Vargas; Monika Kipp; Jonas Frederik Zajaczkowsk; Ingor Baumann; Wolfgang Tillmann; Dirk Biermann	**Uneven cutting-edge division as a design strategy in high-speed drilling of alloy steels** Patricia Blaga; Glad Contiu; Emin Necetin
3.15 - 3.40 pm		**Maximizing production throughput of high-quality microchannels in borosilicate glass using thermochemically assisted grinding with force-feedback control** Guillaume Villeneuve; Jean-Philippe Leclair; Rolf Wuthrich.; Lucas A Hof	**Correlations of in-process measurement data with tool wear in turning of AISI 4140** Sabrina Stemmer; Jiuzhou Xiang; Lars Langenhorst; Jens Sölter; Dirk Stöbener; Andreas Fischer; Bernhard Karpuschewski
4.05 - 4.30 pm	Coffee Break		
	Tool Wear and Machinability	**Grinding and Abrasive Processes**	**Cutting tool and Tool wear**
4.30 - 4.55 pm	**Wear mechanisms of PCD tools with different diamond grain sizes in milling tungsten carbide** Feng Kong; Wei Zhao; Hao Li; Ning He	**Analysis and control of edge shape change in silicon wafer polishing** Urara Satake; Toshiyuki Enomoto	**A comparative study of tool wear behavior for PVD coatings with different functional layers** Benjamin Bergmann; Berend Denkena; Nico Junge; Christian Kalscheuer; Kirsten Bobzin; Xiaoyang Liu; Hans J. Maier; Vanessa K. J. Weißbrodt
4.55 - 5.20 pm	**Rapid on-machine cutting tool geometry characterisation using 3D laser line scanners** Oscar Joseph Anglim; Joshua Priest; Jack Rooke; Richard Bonnell; David Curtis	**Flank polishing of workpieces with non-uniform stiffness** Miren Gorane Urain Gartzia; Julien Chaves-Jacob; Eloïse Jeanroy; Jean-Marc Linares; Pedro José Arrazola	**Machining performance and wear of PVD multilayer TiAlN-TiAlCrN coatings in machining 316L stainless steel** Prabhav Niteen Sumant; Jon Andersson; Rachid M'Saoubi; Axel Bjerke; Celia Pastor; Volodymyr Bushlya
5.20 - 5.45 pm	**Wear prognosis of TiAlCrSiN coated inserts for turning high-strength steels** Kirsten Bobzin; Christian Kalscheuer; Muhammad Tayyab; Thomas Bergs; Markus Meurer; Mustapha Abouridouane; Kiran Abhilash	**Application of the high-pressure abrasive waterjet technology for cutting edge preparation of solid carbide tools** Nermin Redžić; Florian Steffen Morczinek; Martin Dix	**Development and validation of a resource-efficient tribometer for cutting fluid evaluation** Jan Wolf; Nithin Kumar Bandaru; Martin Dienwiebel; Hans-Christian Möhring
5.45 - 6.10 pm	**Fractographic investigations of coated indexable inserts** Lars Müller; Anja Hebestreit; Maximilian Berndt; Hagen Schmidt; Jörg Seewig; Benjamin Kirsch; Eberhard Kerscher	**A physics based multi-scale framework for surface evolution in abrasive waterjet textured additively manufactured continuous carbon fiber thermoplastic composites** Arjun Chandra Shekar; Redouane Zitoune; Benjamin Trarieux; Lucas A. Hof	
6.45 pm	Aperitif in "farinier"		
8.15 pm	Gala dinner in "cellier"		
11.00 pm	Fireworks		
11.30 pm	End and shuttle departure to Mâcon		

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PROGRAM ON FRIDAY, JUNE 19th

	MERCHANT ROOM	TAYLOR AMPHITHEATER	ARMAREGO AMPHITHEATER
	Composite Materials	**Monitoring and Diagnostics**	**Cutting Fundamentals**
8.30 - 8.55 am	**Cutting forces and machining quality in edge trimming of MD-GFRP composites with diamond-coated burr tools** Benoît Schrab; Anne Collaine; Jean-Marie Freyburger; Michel Tourlonias	**Grey-box model for tool wear monitoring in gear hobbing** Steffen Hendricks; Mareike Davidovic; Christian Westphal; Thomas Bergs	**The influence of high-pressure cooling on chip formation, cutting forces, and surface integrity in orthogonal cutting of forged low-lead CW510L brass** Yusuf Kaynak; Emre Tascioglu; Emrah Gunessu; Kasım Önder
8.55 - 9.20 am	**Surface-ply defect quantification in machined UD GFRP composites** Matthias Nutte, Master degree; Edouard Rivière-Lorphèvre; Valentin Dambly; Pedro-José Arrazola; Ismail Lazoglu; Aurélie Granjon; François Ducobu	**Real-time monitoring of energy use for greener machining workshops** Eki Beroitz; Ander González-Ortega; Octavio Pereira; Izaro Ayesta; Haizea González-Barrio; Luis Norberto López de Lacalle	**On the stabilization of 2D FE simulations of chip formation: the role of process-dependent mesh patterns and kinematic ALE mesh constraints** Andreas W. Nemetz
09.20 - 9.45 am	**Investigating the influence of interacting fiber count on chip geometry and cutting forces during end milling of CFRP composites** Darshan S; K A Desai; Abir Bhattacharyya	**ANN-based power consumption modelling for feed drive system in CNC machining using systematic data acquisition** Adam Jacso; Tesfay Abreha Berhe; Isamu Nishida; Hidenori Nakatsuji; Toshiya Kaihara	
9.45 - 10.10 am	**Mechanistic cutting force model: identification of cutting coefficients in finish milling of polylactide (pla) 3D-printed parts** Margaux Lorenzoni; Edouard Rivière-Lorphèvre; Laurent Spitaels; Jérémy Odent; François Ducobu	**Characterization of electrospindle angular synchronization performance in power skiving** Julien Savoldelli; Charly Euzenat; Jean-Baptiste Guyon; Guillaume Fromentin; Ugo Masciantonio; Simon Jolivet	**Combined influence of depth of cut and feed rate on the performance of tools with different cutting radius in machining Ti6Al4V** Mohamed Thanveer G; Joyson Selvakumar S; Samuel Raj D
10.10 - 10.45 am	Coffee Break		
	Precision and Micro Machining	**Non Conventional Processes**	**Cutting Fundamentals**
10.45 - 11.10 am	**Image-based monitoring of tool wear in micro end milling of hardened steel** Yigit Karpat; Ahmet Bedirhan Soylu	**Leveraging Spark Assisted Chemical Engraving (SACE) for high-precision deep cutting of fused silica** Jean-Philippe Leclair; Guillaume Villeneuve; Seyed Ali Delbari; Emmanuel Brousseau; Lucas A. Hof	**Cutting speed effects on surface topography in high-speed broaching of 42CrMo4 steel** Cristhian M. Chingo; Gorka Ortiz-de-Zarate; Andrey Chuvilin; Pedro J. Arrazola
11.10 - 11.35 am	**Tool life estimation in micro-milling through cumulative wear modeling using direct and indirect methods** Alessandro Metelli; Andrea Abeni; Aldo Attanasio	**Application of Pulsed Electro Chemical Machining (PECM) process to replicate micro textures and functionalize surfaces** Stéphane Guerin	**Feed modulation assisted machining for chip breaking in hard turning of AISI 52100 bearing steel** Ainhoa Robles; Iñigo LLanos; Xavier Beudaert; Oier Zelaieta
11.35 - 12.00 pm	**Spatial mapping of material removal rate in diamond turning** Arata Pradhan; Afzaal Ahmed	**Sustainable approach to fabricating flat micro ribbon electric wires directly from turning process chips** Sinan Kesriklioglu	**Chip formation in stainless steel from additive manufacturing** Vincent Wagner; Keller Clement; Pottier Thomas; Yann Landon; Damien Texier; Benoit Vieille
12.00 - 12.25 pm		**Influence of process parameters on surface roughness in Spark Assisted Chemical Engraving (SACE) of high-strength glass** Seyed Ali Delbari; Jean-Philippe Leclair; Guillaume Villeneuve; Lucas A. Hof	
12.25 - 12.50 pm	Closing Session (Armarego Amphitheater) Pr. Guillaume Fromentin, Chairman of HPC 2026		
12.50 - 1.50 pm	Lunch		
1.50 - 3.30 pm	Machining Exhibitions		
3.30 pm	Shuttle Departure to Mâcon		