

ICSP14 is Here!

We are in the 4th Industrial Revolution, also called I4.0, characterized by the deep digitalization of the industrial production and by the progressive diffusion of the additive manufacturing using new materials. Shot peening is rapidly changing and moving toward new applications, new quality paradigms, new machines and media. The 14th International Conference on Shot Peening (ICSP14) is the best place to present the latest achievements and discuss the next steps for shot peening and allied processes.

The ICSP conference, due to the quality of the talks presented and the number of attendants, has become the most important conference on shot peening and allied processes such as cavitation peening, ultrasonic shot peening, laser shock peening and water jet peening. It is now the best-known forum on the science, technology, and applications of mechanical surface treatments. It offers a unique forum for scientists and engineers to deepen and update their knowledge on all aspects of mechanical surface treatments.

ICSP14 will be hosted for the first time in Italy. The organizer is Politecnico di Milano (POLIMI) in partnership with Peenservice. The venue is in Milan at the Campus Bovisa of POLIMI. The chairman is Professor Mario Guagliano—a well-known name in the field and the author and co-author of many papers on shot peening and its effect on the mechanical properties of materials and structural parts.

The expectation for ICSP14 is high not only for most recent development in terms of new materials and the attractive achievements in fatigue strength and life, but especially for the recent innovations in the production environment not yet completely implemented in the manufacturing technology, the so-called 4th Industrial Revolution or I4.0, which is opening new windows also to shot peening.

“I think that with the recent technological developments in line with the “Industry 4.0 revolution”, strictly related to the digitalization of industrial production, there is a great need to know the way shot peening is changing and how this can affect the final results, especially in terms of process quality control as well as the final mechanical properties, fatigue first of all,” said Professor Mario Guagliano.

Bearing this in mind, ICSP14 represents a unique opportunity for researchers and industry representatives to present and learn about scientific and technological developments on shot peening and surface treatments.

Another important subject, intended to become a major topic in the next few years, is the application of shot peening to additive manufactured parts obtained by LMD, SLM, EBM or other processes based on powder deposition and melting.

This new paradigm for industrial production has many limitations related to the poor quality of the surface that limits the mechanical strength (especially fatigue) and prevents a



Professor Mario Guagliano, Chairman of ICSP14

wider diffusion of these technologies. Shot peening and allied processes are very interesting as post-process treatments of these parts. However, the way to set up the treatment and the choice of the optimal process parameters is a still unsolved key point and it is attracting the interest of academics and industrial engineers.

“Despite the present limitations induced by the low deposition rate of AM processes, additive manufacturing will grow and become a leading option in many industrial sectors. We are receiving many papers about the application of shot peening to additive manufactured parts, regarding both the practical aspects and the science behind controlling the surface features. Special sessions on this subject are attracting many participants,” said Dr. Sara Bagherifard, member of the Scientific and Organizing Committee.

Traditionally ICSP is open to the other surface treatments characterized by a peening action on the target material, even if obtained by media different from usual shots. These processes are frequently called “allied processes”: water jet peening, ultrasonic shot peening, cavitation peening, laser-based peening, burnishing, deep rolling, flap peening and so on. Dedicated sessions are planned for these treatments at ICSP14 as well.

Another hot spot of every conference is the quality of the plenary lecturers. These are chosen among the leaders in the field to give an overview of the latest achievements and the present topical subjects. In the case of ICSP14, five plenary lecturers were chosen balancing the academic and the industrial environments. Among the academics, Professor Martin Levésque (Ecole Polytechnique Montréal), president of the International Scientific Committee on Shot Peening, and Professor Emmanuelle Rouhaud will present and discuss their activity on simulation of shot peening and peen forming and SMAT to get grain refinement and superior properties,

respectively. Yongxiang Hu, professor at Shanghai Jiao Tong University, will give a lecture on laser peening, while Dr. Dan Sanders (Boeing) and Pierangelo Duò (Rolls-Royce Deutschland) will discuss the implementation of cavitation peening and surface finishing properties in their companies, respectively.

“What I would like to highlight is that the conference is not only the place to present the latest scientific achievements or interesting case studies about peening, but it is also the perfect place where international exhibitors can present their products and services. We have many companies, both from Europe and overseas, that have confirmed their presence at ICSP14. We have received several requests for booths for demonstrations,” said Professor Mario Guagliano.

Social events are an equally important part of a conference and the same applies to ICSP14. Indeed Milan is a wonderful city in the north of Italy. It is the second largest and the most important financial and economic city in the country. It is a well-known international capital of fashion and design with many opportunities for shopping. Maybe less known than Rome or Venice, Milan is also attractive for history and arts, rich in historical monuments and buildings, with many museums and art exhibitions. In Milan, it is possible to visit *The Last Supper*, the masterpiece by Leonardo da Vinci or the Cathedral, a masterpiece of Gothic architecture.

Walking in the center of the city, around the historical castle or the new districts with innovative buildings is quite pleasant, especially in the late-summer days like the second week in September when ICSP14 is planned. Milanese people like to meet up during the evening along the Channel “Naviglio” to enjoy their aperitif with Prosecco wine or Spritz, tasting the delicious Italian food.

ICSP14 covers these activities and wants to give to the attending people a “taste of Italy.” Thus, a welcome reception is planned at the end of the opening day and the gala dinner is expected in the courtyard of the historical castle in Milan with a cultural visit of the castle itself. A social program for accompanying persons as well as cultural visits and post-conference tours are under development and will be communicated on the website (www.icsp14.org).

“To summarize, while ICSP14 is rapidly approaching, the organizing and the scientific committee are doing our best to host a successful conference, pleasant and fruitful for speakers, attendants and exhibitors. We know that someone could be late in submitting a paper. If you would like to make a contribution at ICSP14 and you have not submitted the abstract, please contact me or the organizing committee. We will do our best to get you on board. And do not forget to check the website for updates and latest information,” said Professor Mario Guagliano (mario.guagliano@polimi.it). ●



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