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PIVOT and PLATIT – company profile (P. Holubář)..... 231

Large space of the previous double edition we devoted to company SHM from Šumperk. In the introduction you could find a mention of its daughter company PIVOT, which was founded by SHM and a Swiss company PLATIT AG. This edition gives space to these companies and their products, which are presently at the cutting edge in the field of PVD equipments used for a preparation of wear-resistant coatings.

Modern PVD technologies and coatings

(P. Holubář, T. Cselle)..... 232

With the kind permission from Prof. M. Píška, largely adopted from the proceedings of Modern production technologies for the 21st century, conference organized by VUT Brno, 15th October 2009. The article depicts current trends in industrial use of PVD technologies from two frames of reference. One of a producer of the coating technologies and its customers, who need flexible technological equipments offering a choice of own programs. The second of a commercial coating centre, which must satisfy the needs of more customers, in short terms and high quality while having the possibility to provide also tailor made solutions. The article introduces current trends in preparation of very hard coatings for the machining, forming and moulding fields.

Key words: PVD, wear resistant coatings, nanocomposite coatings, DLC

PVD coating equipment Pi111 (P. Vogl, P. Holubář)..... 236

Companies Pivot and Platit offer on the market PVD coating equipments using the principle of evaporation by the means of low voltage arc. Equipment type Pi80 has already been produced for 8 years and type Pi300 for more than 5 years. That is why a development of new generation of coating equipments, which use and will use similar principles of evaporation from rotating cathodes has started. The new equipments will however also bring new possibilities in technology, operation and equipment flexibility and of course also new possibilities in preparation of PVD coatings. The first equipment of the new generation was introduced at EMO'09 world exhibition in Milano at the beginning of October 2009. It was coating equipment Pi111, which is a dignified successor of the older Pi80 line. The specification and all advantages of the new equipment make the main content of this article.

Key words: Pi111, coating equipment, PVD coatings

Who is Ing. Jaromír Chmelař?..... 238

The way to industrial design of machines (J. Chmelař)..... 239

The industrial design is today sensed as an inseparable part of machine construction and mainly as an inevitable part of marketing. It was not always as that. Interview of our editor with one of our most known industrial designers Ing. J. Chmelař shows the development of his relationship to design and what were his motivations and goals.

Story of product design birth – line of coating equipments PLATIT by PIVOT a.s. Šumperk (J. Chmelař)..... 240

This article offers an interesting perspective on the genesis of industrial design of new coating equipment π 80 and a line of its accessories. With emphasis on details and motivation explanati-

on, the author leads us through the design made to order. A shift in approach to design over the course of years is also introduced, when the design must tailor to current trends in a preparation of new equipment π 111. Side criteria, which should be brought by new design, e.g. ergonomics and economics are also mentioned. This all is accompanied by information about the real application of designer work in commercial production.

Key words: industrial design, PVD coating equipment

Progress in solid state and diode lasers

(M. Novák)..... 243

Visualization and measurement of SWIR laser beams using commercial CCD cameras (V. Kmetík)..... 245

Capability of 1,3 μ m SWIR radiation detection using commercial CCD cameras was verified in a set of measurements with various sources and detectors. In spite of a very small sensitivity of silicon CCD cameras at 1,3 μ m, in experiment was proofed that selected CCDs are able to detect reliably this radiation and they are suitable for visualization and measurement of SWIR laser beams with a sufficient intensity. Simultaneously, fundamental properties of detectors and their working limits in SWIR band were investigated. In terms of resolution, used detectors were superior to SWIR detectors available for comparison.

An industrial megapixel CCD camera with a GEVision interface was modified for SWIR laser beam measurement at wavelength 1,3 μ m with a high resolution. The camera was tested with a continual diode laser at 1310 nm and a Nd:YAG laser on a secondary laser transition at 1321 nm and with a pulsed iodine photo - dissociative laser at 1315 nm with a resolution of 1390 x 1040 points.

Siemens in International Engineering Fair 2010, Brno

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Monitoring systems for photovoltaic power plants

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Innovation of the amplitude quantization method

(P. Sadovský)..... 253

The paper presents an innovation of the amplitude quantization method to process measured signals. The method allows to quantify a signal using lower number of quantization levels with low quantization noise in the investigated area. Such quantization makes possible considerable data compression in real time without complicated compression algorithms. The quantization was designed for easy automatic processing of long signal segments.

Keywords: amplitude quantization, signal quantizing, signal processing

Ten replies to questions asked by potential exhibitors and visitors of fair ELEKTRO EXPO 2010

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