

Exploring Special Applications

THE SHOT PEENER is covering an important resource in the shot peener's toolbox: **water**. The unique benefits of water are put to good use in Cavitation Peening, Water-Jet Peening and Water-Jet Shot Peening. Two experts in these fields are sharing their knowledge with us in *The Shot Peener*. We're also covering Automated Peen Forming and many more topics of value.

Cavitation S Peening*

Hitoshi Soyama, a Professor at Tohoku University in Japan, gave a presentation on Cavitation Peening at the last SAE Surface Enhancement Committee and Aerospace Materials Engineering Committee meeting. This is a fascinating technique that imparts a deep compressive stress by injecting high pressure water streams in water. I was so impressed with Professor Soyama's research that I asked him to share his work with us. See page 16 for a thorough explanation of the process and its benefits.

Water-Jet Peening and Water-Jet Shot Peening

Dr. David Kirk writes in the opening of his article: "Water-jet peening and water-jet shot peening have the common feature of employing a jet of water. There are, however, important differences between the two processes." Dr. Kirk then proceeds with thorough and easy-to-understand research that explains the differences. See page 22 to see why Dr. Kirk's articles are so popular.

Another Special Application: Automated Peening Forming

Shot peen forming isn't used to increase fatigue strength—it takes advantage of the transfer of kinetic energy from the shot media to the component to generate material flow in all directions. This material flow and the residual stresses induced by peen forming create a permanent curvature of the component. Peen forming is frequently used in the aerospace industry to form large panels such as wing skins and fuselage shells.

KSA Kugelstrahlzentrum Aachen GmbH is a leader in peening forming and the company first automated its re-shaping process successfully at Airbus in 2003. More recently, KSA applied its Automated Peen Re-shaping (APR) to a wide range of complex structural components for a leading European manufacturer of aircraft parts. Dr. Carolyn Kenny with KSA is the author of "Shaping Parts with Shot Peening Forming" on page 6.

Even the Basics Deserve Special Attention

As our readers know, we think every aspect of shot peening (and blast cleaning) deserve attention. That's why we're especially appreciative of Dr. John Cammett's article on coverage and Erwan Henry's review of shot blasting costs and his "sure recipe to reduce your costs."

We hope you enjoy the magazine. Please email me with comments or suggestions for subjects you would like covered in *The Shot Peener*. (jack.champaigne@electronics-inc.com)



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