

# My Shot Peening Bucket List

**PEOPLE THAT KNOW ME WELL** won't be surprised to read that I have a shot peening bucket list. Here are a few of the opportunities for improvement on my list:

- How do we achieve better methods of process control?
- Can we improve productivity by peening to only 85% coverage? This takes only 20% of the time as compared to 98-100% coverage. The fatigue benefit is the same. The productivity is a five-fold improvement.
- Can we adapt computer image analysis systems to qualify the media instead of the age-old practice using sieve screens?
- Instead of relying on the simple media drawings (cartoons) that have been in the specs for over half a century, can we assign a numerical value to the sphericity of the media?
- Real-time process monitoring can become a reality as we follow the trends of factory automation and data gathering.
- Is there a higher density ceramic media capable of performing peening at the mid-to high-“A” intensity levels, thus avoiding ferrous contamination of the product?
- Is there a way we can evaluate the residual stress level of the part as it comes out of the shot peening machine so we know the process is “In Control”?\*
- Can we develop more efficient nozzles that consume less compressed air at lower pressures but achieve the same peening intensity and perhaps at a higher coverage rate?



**JACK CHAMPAIGNE**

Professor Martin Lévesque and Hong Yan Miao at Polytechnique Montréal, along with graduate students, are working in collaboration with the Canadian government and Montreal's aerospace community to advance shot peening research and development. Similar collaborations exist in Germany, Japan and China. Now it's time for the Made in America team to step up. This is being done at my Alma Mater, Purdue University. The new Center for Surface Engineering and Enhancement (CSEE), headed by Materials Engineer David Bahr, is poised to address some of the items on my bucket list. Read more about it on page 36. Several machine builders and media manufactures have indicated an interest in CSEE.

There are many new opportunities awaiting exploitation and the best is yet to come. ●

\*Sintokogio (page 6) and Toyo Seiko (page 18) are making great strides in developing products that validate the shot peening process. Don't miss these articles on their exciting new products.

## THE SHOT PEENER

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