Born Again as a Technologist

We all make transitions in life, which allow revitalization and growth to occur. While such opportunities arise in our personal environments, how does growth occur for a technology? What are tipping points for the advancement of surfacing technologies such as thermal spray, hardfacing, PVD, etc., and how can individuals play a role that suits their personal career goals?

Is technology the driver or engine for innovation? The answer is no. The real drivers are people who dedicate their careers to make the impossible possible, responding to an intrinsic curiosity to do what is considered by their peers as undoable and the need to solve specific engineering applications challenges.

Has thermal spray reached its technological limit? This often seems the case on a year-to-year basis when new developments appear to progress at glacial speed. Yet a literature and the state-of-the-art search in 5- or 10-year increments reveals that people who appear within relatively old conference proceedings are still publishing, which suggests that thermal spray provides a sustainable long-term career. There also is a steady progression of people passing through the field of thermal spray technology, growing at an annual rate of about 15-20%. Furthermore, there is growth in the number and diversity of companies involved in both publishing and exhibiting at conferences, which indicates a healthy prospect for thermal spray with new players and new associated technologies contributing to synergistic growth.

Is there is a limited need for specialists in coatings technology? To survive as a relevant technology, it is not enough to maintain (for example) a $3-billion annual global market. This will not lead to sustainability, and thermal spray will devolve to essentially a boutique technology for special applications rather than the household word that denotes true acceptance. New basic and applied R&D programs are needed to achieve the above goal. Furthermore, technology-savvy people are desirable to start, manage, and implement these programs. Where will these people come from and what incentives are there for a young professional to enter the surface engineering field? The answers to these questions are disappointing. Many young people find science and engineering “too hard,” and surface engineering technologies are suffering. On the positive side, professional societies including TSS, ITSA, DVS, GTS, and many others are playing a significant role in specialized education and training for technologists of all types.

The born-again technologist is a person who meshes the three themes presented so next-generation products can be developed. This technologist, by keeping an open mind, holds the key to the leap-frog technology that surface engineering continues to create.