# Pioneers in Microencapsulation: Ronald J. Veršič

*Charles Frey, Coating Place, Inc., U.S.A.*

*Ronald Veršič*
*President, Ronald T. Dodge Company*

Ron Veršič has established and cultivated a steady presence in the microencapsulation field since his initial exposure to the concepts—first during a visit to National Cash Register (now NCR) in April 1960 as a member of Junior Engineering Technical Society (JETS) and then later in the decade when he began his career in the field (1969). I first met Ron at a particle coating course offered by The Center for Professional Advancement (CPA) in 2001 and have worked with him on the Consumer and Diversified Products (C&DP) Steering Committee since 2004. He has an inquisitive nature and a passion for understanding how things work. He also has a remarkable capacity for retaining knowledge and details—a skill that has helped him develop a firm expertise in microencapsulation. His welcoming and caring demeanor quickly puts one at ease, and an innate practical nature has created a unique and fruitful life experience with few regrets.

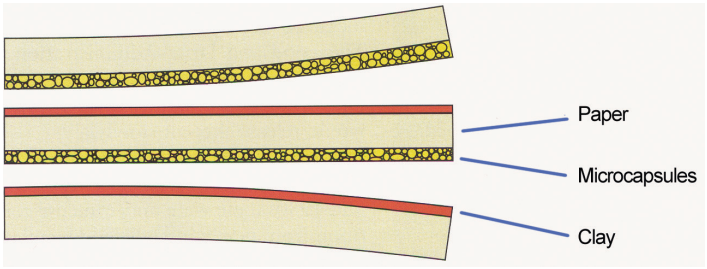
Ron received his master's degree in physics from the Johns Hopkins University and his doctorate in materials engineering from the Ohio State University. His work career began in the area of encapsulation technologies used in photographic imaging. This started in 1969 with GAF but was limited to six months because of an economic downturn in 1970 and a reduction in the company's workforce. This involvement, however, led to a contractor position with the U.S. Air Force, where Ron worked on KH-2 photographic imaging technology for satellites. (KH, or Keyhole, reconnaissance satellites are typically used to take overhead photos for military missions.) From December 1971 to April 1976, he was employed by the Standard Register Company to work on an emerging imaging technology for photographic film. As he became reacquainted with and established a deeper knowledge base in microencapsulation technologies, he was successful in developing and building a state-of-the-art microencapsulation scanning densitometer for his employer. From 1976 to 1979, he worked for Monarch Marking in the area of price labeling images.

In 1979, Ron saw a need in the business world that led to his establishment of the Ronald T. Dodge Company. Prior to this time, numerous microencapsulation technologies had been established commercially. Companies using this technology often contracted out the microencapsulation work. Further, most of the efforts in the larger companies did not lead to commercialization. Ron's business entertained a variety of microencapsulation technologies over the years, including urea formaldehyde (UF) or polymethylene urea (PMU), gelatin coacervation, spray drying, fluid bed coating, and Parylene chemistries. His company became well-known for coacervation, Wurster (bottom spray fluid bed), and other coacervation chemistries with an extensive array of applications. Ron often noted that applications know-how (applied, problem-solving technology) was "at the heart of [his] business then—and remains so today."

Ron joined CRS in 1984. The roots of CRS are near his home in Dayton, Ohio, and Ron has acknowledged Frank W. Harris as an early force in the development of the society. Ron has found CRS a good fit for his interests and endeavors, and he has been frequently and enthusiastically involved ever since. Ron attends and participates in most annual meetings; cochaired C&DP sessions in 2002 and 2011; was a visionary organizer and participant in the CRS revitalization of C&DP in 1995; and in 2011 was elected a fellow of CRS.

Ron is a member and distinguished fellow of the American Chemical Society (ACS) and a member of the American


*In 1979, Dodge headquarters was a rented office and lab. In 2004, the cornerstone was laid for their current building (above). Today, Dodge manufacturing, laboratory, engineering, and general office space totals 16,000 square feet (compared with 1,600 square feet in 1983). The company has successfully encapsulated products from more than 600 different core materials.*




*Carbonless paper—invented by Barrett K. Green, the "Father of Microencapsulation" in the 1940s and released by NCR in 1954—has three layers: the paper, a film of acid-sensitive dye packaged in microcapsules, and a layer of acidic clay to develop the dye. The microencapsulation work of Barrett Green provided a foundation for applications in many diverse industries.*

Association of Physics Teachers (AAPT). He has received the Award for Outstanding Professional Achievement from the Affiliate Societies Council of the Engineering and Science Foundation of Dayton. Ron has served as an adjunct assistant professor in the Division of Pharmaceutics and Drug Delivery Systems at the University of Cincinnati Medical Center. Further, he has taught the course "Microencapsulation & Controlled Release" as part of the continuing education program for the Society of Cosmetic Chemists (U.S.A.).

More recently, Ron was a visiting professor in 2008 at the University of Vienna (Austria) in the Department of Pharmaceutical Technology and Pharmacy. In 2012, Ron helped establish the Donald D. Emrick Memorial Library—a corporate library that contains thousands of books, technical papers, and other printed materials on a variety of topics on the art and science of microencapsulation and the development of controlled release products. Many of the books are rare, hard-to-find, or one-of-a-kind technical publications that no longer exist in other libraries. Access is available to serious students, scholars, scientists, and entrepreneurs (www.controlled-release.com).

I consider Ron Veršič one of the pioneers in microencapsulation because he has used his distinctive work experiences and innovative ideas to take the industry to a place where it would not have gone without his many contributions. Some useful insights from Ron's experiences are shared in the following question and answer format.

**Q** *How did your experience and knowledge of the industry lead to starting, and then successfully running, your own microencapsulation business?*

**A** Commercial applications for microencapsulation technologies were recognized and established several decades before I started my own business. For example, NCR had explored the technology and subsequently developed carbonless copy paper—a revolutionary product at that time. NCR technology was transferred to Capsulated Systems, Inc. (CSI) and Djinnii Enterprises. Later, Djinnii and American Thermometer developed color-indicating thermometers for aquariums, using microencapsulation as the base technology. The pioneering technology that originated with NCR evolved into modern-day coacervation techniques, eventually resulting in the development of scratch-and-sniff products, time-release capsules, and many other products.

All too often, however, the emphasis in the development of these products was on technical research. Solving the microencapsulation problem was only a small, albeit critical, part of the service and support needed. A commercial venture had to be technically proficient, yet I believed then—and now—that any successful microencapsulation business needed to provide manufacturing on a large scale, new applications ideas, and a complete, solid business plan for providing professional support and service to its customers. It seemed to me that little thought had been given to providing this level of service and support.

The heart of my business plan did not focus on any specific microencapsulation methodology, but it did embrace any technology that we could offer that would enhance and improve both a technical and an economical solution to a particular encapsulation problem. Over the years, we have become a trusted source of encapsulated products because, in addition to the end products, we offered applied R&D, pilot testing, and full-scale production services. Then and now, we still emphasize our unique business model as the "innovative art and science of microencapsulation and controlled release."

**Q** *What have you focused on over the past 34 years that has led to the success of your company?*

**A** Others found it was more practical to outsource the microencapsulation work in order to take full advantage of an established expertise rather than bring it in house to satisfy the vital, but limited, overall commercial need. We took advantage of this opportunity when we formed the Ronald T. Dodge Company in 1979.

Commercial microencapsulation production services were established as the heart of our business—and, eventually, led to our success. We did not focus on any specific microencapsulation technique; rather, we entertained a variety of microencapsulation technologies. These included *in situ*

**Dr. Veršič developed and authored the Barrett K. Green website as a tribute to Green's pioneering efforts in the field. For more information on Green's achievements, see www.coacervation.net.**

*On his business, Veršič says: "The heart of our business is our ability to manufacture microcapsules on a large scale—everything from exploratory vision to pilot scale-up to full production."*

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polymerization (such as urea or melamine formaldehyde processes), coacervation, spray drying, fluid bed coating, and Parylene chemistries. Further, in developing new microencapsulated products and solutions, our technical focus remains on good science, verifiable numbers, thorough and complete testing, and applications know-how.

Today, we work in a much wider range of industries than others in our business. We are not a consulting business—rather, a full-service solutions-based development and manufacturing company that produces microencapsulated products. Industries we serve include adhesives, agriculture, automotive, cosmetics and personal care, neutraceuticals, fragrance delivery, home care and improvement, industrial, medical and dental, military, paint, printing and paper, recreation and novelty, research and development, security, and textiles.

As we say in our website, "It's this commitment to customer service, quality, and teamwork that defines the mission of the Dodge Company."

**Q** *What difficulties have you encountered, what opportunities did you find as a result of your unique background, and do you have any regrets in starting and running a one-of-a-kind business?*

**A** Being an entrepreneur (especially in a highly technical area) was and is more difficult than is commonly portrayed by the media. Running a business—any business—requires careful attention to building, supporting, and improving all aspects of your operation. In our case, it required thorough planning, significant capital, and a clear understanding of the complete needs of our customers.

As much as I enjoyed both the art and science of the business, it became obvious that this business could not treat the endeavor as a hobby or lifestyle business. Further, we focused on niche markets (instead of established or mature markets) and avoided short-lived fad products (e.g., mood rings). As a result, we have been able to generate tens of millions of dollars in sales and deliver quality, leading-edge products to a wide range of customers.

I've enjoyed the freedom to run the type of operation I like. I have also enjoyed the opportunity to travel globally, allowing me to meet talented people around the world and visit many interesting places along the way. Even my children have expanded their horizons and developed a more global perspective because I have been able to share these experiences with them.

**Q** *How do you see the future of the microencapsulation business?*

**A** To me, success is the ability to develop products that are needed, work well, and solve problems that can't be solved otherwise. Today, we have not explored, nor found, enough uses for the microencapsulation technology. The future will be bright for entrepreneurs—first, if they have the ability to solve the technical problems, and second, if they have the business acumen and tenacity to take a different, perhaps closer, look at this highly expandable marketplace. In short, it takes commitment and something of a pioneering spirit.

**Q** *Please share some of your lessons learned from your experience in operating a commercial, broad-based encapsulation business.*

**A** People will come and go throughout your career. Be open to them, and share what you bring to the table so that that information can be used to its fullest advantage and benefit. Be prepared and open for change, because it will happen—ready or not. Learn the new technologies, and be attuned to new trends, changes, and developments in marketing techniques. Older methodologies don't work anymore. Recognize and use the resources available on the Internet. Don't knock on doors. Rather, look for problems to solve. Focus on needs-based marketing. Roll with the punches. Do what interests you.

Finally, be a visionary. Few businesses can survive without a clear vision of where they are going and how they are getting there. Anticipate—and plan for—success. ■