

# **ROBERT G. BAYLESS**

## **CHIEF TECHNOLOGY OFFICER**

### **EDUCATION:**

**1961 – 1964**

University of Cincinnati, (*Cincinnati, Ohio*)  
MS in Physical Chemistry

1953 – 1956

Central State University, (*Wilberforce, Ohio*)  
BS in Chemistry

### **ACHIEVEMENTS:**

- **Broadened the application of microencapsulation products into development and production of controlled release systems for mariculture (marine) feedstuffs and supplements, chemical and biological pesticides, biodegradation agents, catalysts for adhesives, ion exchange systems, medical devices, pharmaceuticals, specialized consumer products, and hazardous material management systems.**
- **Demonstrated the feasibility of encapsulating larger items (macroencapsulation or conformal coating), which broadened the scope of activity into such diverse operations as hybrid electronic circuits, corrosion inhibition, and metallic adhesion.**
- **Recognized internationally as an authority in new micropackaging concepts with a distinguished record in aqueous, non-aqueous and high temperature phase equilibria.**
- **Conducted extensive research into problems related to stabilization of epoxy mixtures, stabilization of liquid crystal coatings and techniques for separation of reactive media.**
- **Founded Bayless Consulting, Ltd. in 2003, ENCAP Technologies, LLC in 2001, Bayless Enterprises, Inc. in 1990, and Capsulated Systems, Inc. (CSI) in 1973.**

### **RELEVANT EXPERTISE:**

2001 – Present

**ENCAP Technologies, LLC, (*Atlanta, Georgia*)**

Chairman & Chief Technology Officer

- Perfected the Encapsulation of Electroluminescent (EEL) Phosphors.
- Invented a polymeric coating which is impermeable to oxygen and moisture and allows for the prevention of global corrosion.

1990 – 1998

**Bayless Enterprises, Inc., (*Atlanta, Georgia*)**

Chairman & Chief Executive Officer

- Founded Bayless Enterprises, Inc. for the purposes of further perfecting the process of Microencapsulation of Electroluminescent (EL's) Phosphors, Organic Light Emitting Diodes (OLED's), and other particles while researching the expansion of conformal coatings.

1973 – 1990

**Capsulated Systems Inc. (CSI), (*Yellow Springs, Ohio*)**

Chairman & Chief Executive Officer

- Development of microencapsulation system for mariculture feeds. Laboratory tests indicated improved health and growth of marine animals.
- Invented microencapsulated adhesive locking system (CAPLOK) for threaded fasteners (bolts, screws). Replacement for expensive, clumsy mechanical locking devices.
- Developed and Patented a conformal coating (AVCAP) for a wide variety of corrosion inhibition applications. A form of the coating underwent extensive test program and was approved by the U.S. Department of Defense for its Qualified Products List (QPL) per MIL-I-46058 for use in protecting electronic circuits.
- Microencapsulated catalysts used in plastics molding industry. These are highly volatile, combustible materials. Their microencapsulation was a particularly noteworthy achievement.
- Developed a microencapsulated toner which currently is used by one of the largest copier manufacturers in the world.
- Microencapsulated agrochemicals (herbicides and insecticides) for the world's largest agrochemical company.
- Developed ZnCAP, a zinc-rich primer using pseudo-encapsulated zinc; a unique corrosion inhibition product ferrous metal.
- Invented SPOT-A-WAY, a personal-use, disposable, spot remover using microencapsulated dry cleaning fluid (1,1,1 trichloroethane).
- Developed EELS, an Electroluminescent Light System using microencapsulated phosphors.
- Invented FYR'CAP, a microencapsulated fire retardant product.
- Invented SILCAP, a lubricant system employing microencapsulated silicon oil.
- Microencapsulated fragrances for controlled release application.
- Investigated a wide variety of applications for microencapsulation.

1967 – 1973

**NCR Corporation, (*Dayton, Ohio*)**

Materials Research – Research Chemist

- Researched plastics technology, microencapsulation, and aminoplasts.
- Areas of concentration: carbonless copy paper and time released aspirin.
- **Authored over a dozen patents in the field of microencapsulation and contributed to the development of carbonless copy paper and time released aspirin during his career in NCR's Capsular Products Division.**

1960 – 1963

**U.S. Industrial Chemical Co. (Quantum Chemicals), (*Cincinnati, Ohio*)**

Chemist

- Investigated polyethylene and polypropylene morphology.
- Invented a molecular weight distribution evaluation system.
- Studied polymers' melt viscosity and relationship to molecular weight distribution and crystallinity.

1956 – 1958

**Antioch College**, (*Yellow Springs, Ohio*)

Researcher

- Conducted hydrothermal research—the study of water at high temperatures and pressures; critical temperatures.
- Studied crystal growth technology associated with semiconductors.

## Patents Attributable to Robert G. Bayless

COUNTRY	PATENT NO.	INVENTOR	ISSUE DATE	DESCRIPTION
South Africa	6704993	RGB, et al.	Jan 1968	Minute rupturable reagent-containing polymer capsules
South Africa	6900123	RGB, et al.	Jun 1969	Hydrophobic polymer microcapsules
South Africa	6900122	RGB, et al.	Jun 1969	Minute polymer capsules
South Africa	6900089	RGB, et al.	Jun 1969	Microencapsulation
South Africa	6900088	RGB, et al.	Jun 1969	Minute polymer capsules
Germany	1934458	RGB, et al.	Jan 1970	Pressure-sensitive recording material
France	2012741	RGB, et al.	Mar 1970s	Pressure-sensitive recording Support
Germany	2034658	RGB, et al.	Jan 1971	Poly (vinyl alcohol films of high solubility in water)
Canada	879,043	RGB	Aug 1971	Encapsulation process & its products
Canada	880,261	RGB, et al.	Sept 1971	Capsule wall treatment process
South Africa	7102853	RGB	Nov 1971	Hydrophobic treatment of minute polymer-thin-walled capsules
Germany	2123681	RGB, R. Hart	Dec 1971	Treating small capsules to make them hydrophobic or to increase hydrophobic properties
Germany	2253050	RGB, et al.	May 1973	Small polymer capsules
U.S.	3,565,818	RGB, et al.	Feb 1971	Encapsulation process and its products

U.S.	3,574,133	RGB, et al.	Apr 1971	Encapsulation and its process
U.S.	3,576,660	RGB, et al.	Apr 1971	Pressure-sensitive record sheet and coating composition
U.S.	3,629,140	RGB, et al.	Dec 1971	Cold water solubilization of capsule walls & products using this principle
U.S.	3,674,704	RGB, et al.	Jul 1972	Three-phase system using poly (ethylco-vinylacetate) wall
U.S.	3,726,803	RGB, et al.	Apr 1973	Interstitial condensation reaction
U.S.	6,562,460	RGB	May 2003	Improved moisture barrier properties
U.S.	6,833,191	RGB	Dec 2004	Improved moisture barrier properties
U.S.	6,899,958	RGB	May 2005	Moisture barrier resins provide improved impermeability to moisture and extended release
U.S.	7,297,404	RGB	Nov 2007	Improved moisture barrier properties
China	03814533.2	RGB	Jul 2009	Moisture barrier resins
U.S.	8,003,211	RGB	Aug 2011	Microencapsulated particles and process for manufacturing same
U.S.	8,394,497	RGB	Mar 2013	Microencapsulated particles and process for manufacturing same