ANALYTICAL RESEARCH SYSTEMS, INC.

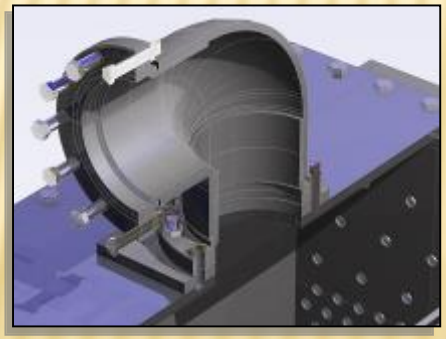
www.ars-fla.com

ABOUT ARS, INC.

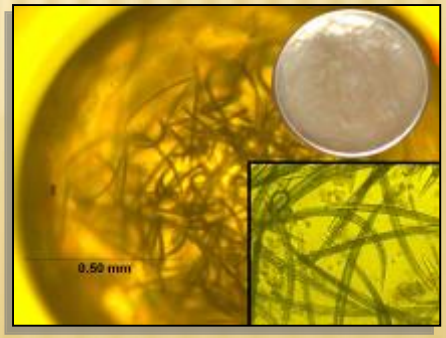
ARS, inc. was established in 1995 (having merged with Southern Scientific Inc, est.1974) as a full service scientific & engineering company to provide professional and technical level services as well as manufacture a wide range of specialty products needed by researchers in various fields of science in academia, government and industry.

PRODUCTS

In addition, ARS conducts basic research for its own new product development as well as collaborative research for customer needs.



SERVICES



RESEARCH

ARS PRODUCTS

Has invented and produces several types of industry standard equipment that is routinely used in the agricultural, chemical, entomological & environmental markets, such as:

Automated Volatile Collection Systems (AVCS)

Purified & Humidified Air Delivery Systems (ADS)

Volatile Collection Chambers (VCC) & Traps (VCT)

Y-Tube & Multi-choice Arena Olfactometers

Bioassay Wind-Tunnels & Insect Collection Traps

Environmental Stack Sampling Equipment

Small to Large-scale Distillation & Extraction Equip.

NO-FLOOD Kuderna-Danish Concentration Systems

Carbon Disulfide Evolution Apparatus (CDEA)

Radon Gas Bubblers & Various Impingers

ARS SERVICES

TECHNICAL SERVICES OFFERED

CUSTOM SCIENTIFIC GLASSBLOWING:

BOROSILICATE (PYREX) FLAMEWORK, MACHINING, GRINDING
QUARTZ FLAMEWORK, MACHINING, GRINDING
LAB APPARTUS TO LARGE-SCALE PILOT-PLANT GLASSWARE
ALL STANDARD HARD-GLASS ADAPTOR AND THREAD TYPES
(ACE, CHEMGLASS, KIMBLE, CORNING, ETC.)
MEETING HIGH TOLERANCE REQUIREMENTS

CUSTOM MACHINING & SMALL PRODUCTION CAPABILITIES :

MILLING, TURNING (LATHE), CUTTING, GRINDING (WET & DRY)
CUSTOM MACHINING OF MOST:
METALS, ALLOYS ,CERAMICS, POLYMERS,GLASSES, RESINS
SPECIALTY TOOLING, THREADING
WELDING OF STEELS, ALUMINUM & SS (STICK, MIG, TIG)

CUSTOM ELECTRICAL / ELECTRONIC PRODUCTION:

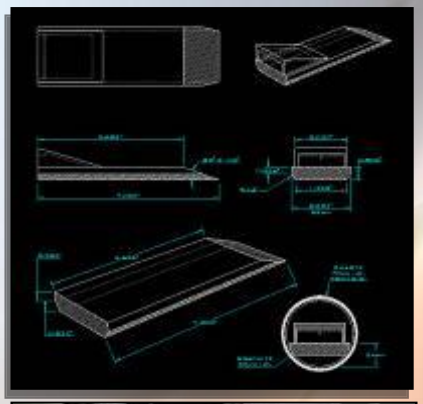
ANALOG AND DIGITAL PRODUCT DESIGN & ASSEMBLY
ETHERNET CONTROLLED DEVICES
MONITORING & DATA ACQUISITION SYSTEMS
POWER DISTRIBUTION & CONTROL SYSTEMS
MOTOR CONTROL AND POWER SWITCHING SYSTEMS

ARS SERVICES

PROFESSIONAL SERVICES

ENGINEERING SERVICES:

MECHANICAL DESIGN & PROTOTYPING
GLASS & CERAMICS COMPONENT DESIGN
CHEMICAL ENGINEERING PLANT DESIGN
ELECTRICAL/ELECTRONIC CIRCUIT DESIGN
CUSTOM MONITORING & CONTROL SYSTEMS
METALLURGICAL & MATERIAL FAILURE ANALYSIS

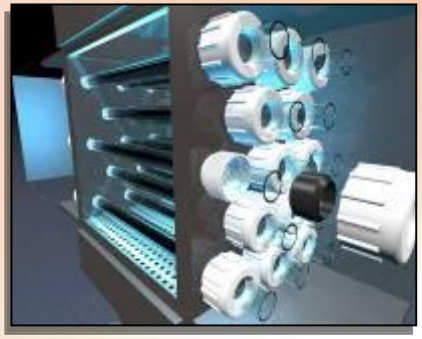


LABORATORY & CHEMISTRY SERVICES:

POLYMER CHEMISTRY & MATERIAL SCIENCES
ANALYTICAL CHEMISTRY & CHEMICAL ANALYSIS
SAMPLE PREP & VOLATILE COLLECTIONS
RESEARCH GRANTS & COLLABORATIVE RESEARCH
HYDROCAPSULE / ENCAPSULATION SERVICES
ENTOMOLOGICAL RESEARCH & BIOLOGICAL TESTING

COMPUTER & PROGRAMMING SERVICES:

CAD - AUTOCAD 2002+, 3D MODELING & FULL RENDERING
IMAGE DEVELOPMENT & MANIPULATION
STILL LIFE & MACRO PHOTOGRAPHY
WEBSITE DESIGN & DEVELOPMENT
GENERAL PROGRAMMING (UNIX/LINUX, C++, FORTRAN, MACHINE)
CUSTOM DATA ACQUISITION & PROCESS CONTROL SOFTWARE



ARS RESEARCH

ARS's roots have always been in research, with all of its staff coming out of academic or governmental research labs – our company still continues to conduct research in our own facilities through various sources of funding.

ARS has received multiple SBIR grants, US Government CRADA's and Specific Research Agreements (Contracts), as well as State Level & Private Funding (Florida Dept. of Agriculture & Florida Citrus Growers Board) to develop new technologies with high commercial potential.

ARS also works collaboratively with many research scientists at several universities to develop a wide range of technologies in various fields of science.

RESEARCH IS OUR PASSION !

HYDROCAPSULE

HARDWARE

This ARS patented technology was initially developed under federal grant funding in the late 1990's for entomological / agricultural applications to provide a delivery system for aqueous based nutritional diets for mass-rearing a wide range of entomophagous (beneficial) insects for Biological Control.

This technology is not only capable of encapsulating aqueous solutions, but many other liquids and mixtures of liquids (including suspensions with various particle sizes).

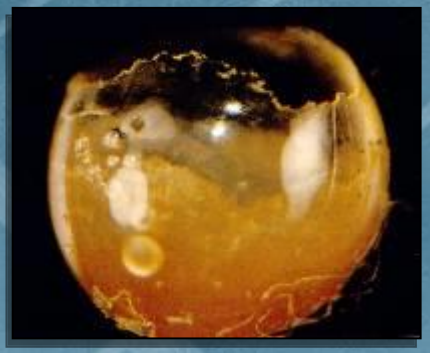
We have encapsulated water, many aqueous solutions, various animal and plant based protein solutions, and oils. Additionally we have also encapsulated bacteria, organisms such as nematodes and shrimp eggs, blood products, and several other chemical solutions for many research labs and clients.

We have several formulations of coatings available to allow for varying environments, strengths and thicknesses of the shell polymer, triggered or controlled release of capsule contents.

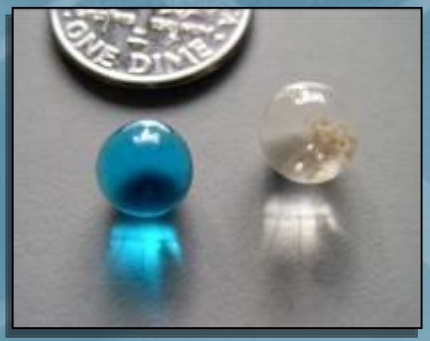
HYDROCAPSULE

APPLICATIONS

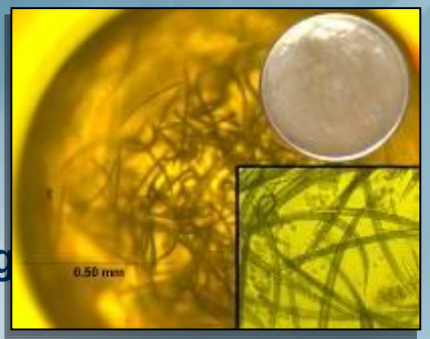
Potential applications of this technology include, but are not limited to, the encapsulation and delivery of:



- a wide range of liquid nutritional / diet supplements for animals
- bacteria, fungi, viruses, cells, microbes, biological agents, entomopathogenic organisms or other pathogens
- bio-rational pesticides and/or water-proof traditional pesticides



- aqueous based pharmaceutical agents / drugs such as oral vaccines
- drugs or essential liquid nutrients (eg. omega 3 oils) for delivery to aquatic animals
- higher-value urban entomological pest control applications



- insect mating / disruption by chemical release (pheromone delivery)
- aqueous based flavor or fragrance delivery or provide water-proofing

HYDROFAST

The **HYDROFAST** technology is an ARS patent (& trademark)-pending technology, consisting of a polymeric chemical additive and re-formulation of commercially available bait-sprays, which is environmentally safe and inexpensive. It can be used to increase field longevity, decrease the number of applications (i.e. lowering costs), and reducing total pesticide use, for the control of pest fruit-flies and other crop insect pests.

The HydroFast technology was designed to provide a large increase in the rain-fastness (resistance to wash-off) of aqueous protein-based bait sprays.

HydroFast enhanced bait-spray has successfully shown in accelerated laboratory rain testing, an increase in rain-fastness of 20X. This represents a significant reduction in the amount of pesticides that would be washed-off into surrounding ground-waters and the number of re-applications needed to maintain the same level of pest-control.

This technology was also separately tested and evaluated by scientists at the Florida Dept. of Agriculture's main fruit-fly rearing facilities in Gainesville, FL.

HYDROFAST

This technology is based on chemistry using very safe (non-toxic compounds) such as starches, carboxy-methyl cellulose (CMC), and poly(vinyl alcohol) & (acetate).

All are 100% environmentally safe, biodegradable, and have zero health and safety concerns (commonly used in food processing).

Starches can only be dissolved in very hot water and are not soluble in cold water. This produces a viscous solution and the starch remains in solution, even after subsequent cooling and then can be secondarily mixed with a cold solution. A starch solution applied to a surface and dried cannot be easily removed by cold water.

Copolymers and blends of PVOH and PVAc are commonly used in water-based adhesives such as paper and carpenter's glues, which are water-proof after drying, and yet are initially an aqueous solution.

Mixtures of these items are used in the HYDROFAST technology.

This technology if applied to currently used bait-sprays could significantly reduce the amount of pesticides released into the environment, thereby providing huge health benefits to both people and animals as well as provide an equally beneficial political value for any company marketing those products.

OTHER RESEARCH

ARS has jointly conducted research with hundreds of clients & customers in a wide range of technologies over the past 10 years.

In most cases, ARS has executed a confidentiality with our client to protect their intellectual property (IP) as well as our own

ARS ‘s client base includes some of the most world-known research individuals, groups, departments, universities, government labs and private industries in the world, whom routinely call upon ARS for consultation or services. We respect and honor our clients’ confidentiality at all times and have gained the trust of these clients. With having this much exposure and experience with so many diverse projects and clients, we can provide a significant amount of research expertise to any customer to help solve their problems.

ARS’s staff along with our hundreds of customers have referenced our equipment & technologies in over several hundred of peer-reviewed scientific journals and papers of the last 10 years. Most of these can be accessed by on-line searches.

Our past clients / customers reference are available.

CONTACT INFO

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