INTRODUCTION TO SPRAYING SYSTEMS CO

RUDOLF SCHICK

Spraying Systems Co.®
Experts in Spray Technology

Spraying Systems is the world leader in spraying and coating technologies

What we provide

Spray nozzles, related systems and accessories, for virtually all possible spray applications

Powder processing technology

State of the art testing facilities unique to our company

Quality, service, support, engineered solutions (>400 patents)

Who we serve

Industries: Food and beverage, Petrochemical, Energy, Automotive, and many more.

Players: #1 spray technology provider among many of the largest manufacturers within their respective industries.

Why they work with us: we strive to reduce waste, enhancing sustainability as well as creating a safer work environment and healthier bottom line.

Where we work

Global/Regional engineering and manufacturing: 10 countries, 4 continents

100+ local sales engineering offices around the world

Headquartered in Wheaton, IL. Privately owned (est. 1937)

Why we are talking to you

Our facilities and knowledge can be utilized to benefit energy storage solutions. We can provide the expertise, product, and technology needed to further your goals.

SPRAYING SYSTEMS DIFFERENTIATED CAPABILITIES

Capability	Differentiation	Applications
Advanced coating solutions	• Our vast experience in coating applications enables us to research/develop coating techniques uniquely suited to benefit energy storage innovations. • Currently researching and prototyping specific nozzles for this process.	• Membrane coating • Nanostructure creation • Material/powder coatings
Low temperature electrostatic spray drying (PolarDry)	• Patented technology that eliminates active ingredient loss • Proven to improve viability and stability of process powder, ideal for the creation of energy storage materials. • Scalable from R&D to production-sized models	• Material creation • Superior morphology • Controlled agglomeration reduces post-processing, allowing higher bulk density
Computational modeling services	• Simulate physical phenomenon using numerical analysis and refining our models with our expansive, and proprietary library of precision spray data.	• Optimizing coating coverage • Optimizing Spray Drying process dynamics • Analysis of system robustness
Material testing	• Own/operate the world's largest spray research laboratory • Access to nearly every modern spray characterization instrument	• “Sprayability” testing for potential materials • Particle sizing and analysis • Validation of processes

HOW WE CAN HELP YOU SUCCEED

Prototyping

We can fabricate a wide array of potential spray and related products. This could mean a nozzle with special materials, custom connection geometry, different exit orifice sizing or shaping, and the systems needed to support such sprays (pumps, controls, electronics, etc).

Various methods of prototype creation, including CNC machining, rapid prototyping, and 3D Printing.

Material testing

Access to spray characterization instruments such as:

- Laser Sheet Imaging
- Phase Doppler Interferometer
- Laser Diffraction Particle analysis
- High-Speed Imaging/Particle Sizing
- Ultra High-Speed Video (visualization of the atomization process, or dynamics of deposition onto a surface/target)

Product development

Experience and resources available:

- Spray characterization and sensor development experience
- Comprehensive 3D CAD and visualization tools
- Prototype fabrication resources
- Marketing and Promotion resources
- Hardware, software, and integration experience
- Custom circuit board engineering and fabrication support
- Standard and exotic materials familiarity for fabrication

Scaling

Spraying Systems Co. has global representation including:

- 15 global manufacturing facilities
- 100+ sales global offices
- 400+ active global patents

We have additional process and research labs around the world, including New Hampshire, France, Germany, South Korea, China, Japan and Australia.

Experience, infrastructure, and global presence position Spraying Systems Co. to help companies scale alongside expanding workload and scope.

ABOUT ME

Rudolf J. Schick, MS, MBA is Chief Science Officer at Spraying Systems Co. providing internal scientific leadership while building external partnerships and collaborations in product development. Under his direction, he aligned the company's diverse testing facilities, best evidence from research and practice, and organizational learning to establish the world's largest and most sophisticated industrial spray laboratory. Rudi champions innovation by engaging multiple disciplines and capitalizing on the company's breadth and experience to translate science into commercial product solutions. He also oversees business portfolios focused on disruptive technologies as strategic growth drivers. Rudi is a published author, industry speaker, and his professional affiliations include the American Society of Testing and Materials (ASTM), former Chair of ILASS (Institute of Liquid Atomization and Spray Systems), American Association of Pharmaceutical Scientists (AAPS), American Physical Society Department of Fluid Dynamics (APS-DFD), and Chair of the Industrial Advisory Council of the University of Illinois.

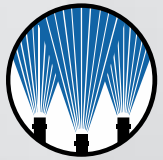
THANK YOU

ADDITIONAL RESOURCES:

WWW.SPRAY.COM

WWW.SPRAYANALYSIS.COM

WWW.FLUIDAIRINC.COM



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