About Us

Documentation

Roll-2-Roll Technologies began with a simple question: *Why is web guiding so complicated?* At Oklahoma State University's world-renowned **Web Handling Research Center**, our founders spent years studying the physics of moving webs—discovering that the industry's reliance on complex calibration rituals was a symptom, not a solution.

With funding from the **National Science Foundation (NSF)** and the **Oklahoma Center for the Advancement of Science and Technology (OCAST)**, we developed patented fiber-optic sensing technology that doesn't just work better—it works *simpler*.

Today, our sensors guide materials at **±0.127 mm repeatability** and speeds up to **760 mpm (2,500 fpm)** —on clear films, opaque substrates, metallic foils, and porous nonwovens—**without recalibration**.

Our Mission

> *"Democratize access to precision web handling technology."*

We believe that sophisticated technology should be accessible to everyone—not just specialists with years of training. Our mission is to remove complexity from the equation, delivering solutions that any operator can set up in minutes and any maintenance team can support without calling in experts.

We invest countless hours in R&D so our customers don't have to invest hours in calibration. We engineer simplicity into every product so that even the most challenging materials—clear films, metallic foils, mesh, nonwovens—can be guided with the push of a button.

The Simplicity Difference

While competitors offer complex systems that require specialist setup and frequent recalibration, Roll-2-Roll Technologies delivers sophisticated technology that's genuinely easy to use. This isn't a marketing tagline—it's our engineering philosophy:

- **No Recalibration Required:** Our fiber-optic sensors work on clear, opaque, metallic, and porous materials without adjustment. Change your substrate—the sensor adapts automatically.

- **Get Running in Minutes:** No specialist required. Typical installation takes hours, not days—and you're producing quality product from the first roll.
- **Material Agnostic:** One sensor handles 100+ material types—from transparent BOPP film to copper battery electrodes to expanded metal mesh—with the same precision.

Why Fiber-Optic Technology?

Traditional ultrasonic and infrared sensors drift with temperature changes, require frequent recalibration, and struggle with transparent or reflective materials. Our patented fiber-optic sensing technology eliminates these limitations:

- **Temperature-immune:** No drift from ambient temperature changes in your plant
- **Material-agnostic:** Works on any substrate without sensor swaps or recalibration
- **Superior resolution:** 0.0635 mm (0.0025 in) hardware resolution at speeds up to 760 mpm (2,500 fpm)
- **Ruggedized for industry:** Built to withstand harsh production environments

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Our Philosophy

Customers are partners. We don't just sell products—we solve problems. Our engineers have decades of combined experience in web handling, and we work alongside your team to ensure every installation delivers measurable results.

Employees are assets. Our team includes PhDs in web dynamics, controls engineers, and industry veterans who've spent careers perfecting the science of moving materials. This expertise lives in every product we build.

Products are the mission. We spend countless hours in R&D to save minutes for our customers. Every feature we add must make the operator's job easier, not harder. If it requires a manual, we haven't finished engineering it.

Trusted by Industry Leaders

Roll-2-Roll Technologies sensors are operating in facilities across the globe, guiding critical processes for some of the world's most demanding manufacturers:

- **Fortune 500 Medical & Hygiene Manufacturer** — High-speed diaper and medical product lines
- **Global Adhesive & Materials Company** — Precision defect detection at 250+ fpm and web guiding inside a vacuum

- **Leading Nonwovens Producer** — Spunbond, meltblown, and hygiene applications
- **Specialty Glass & Materials Manufacturer** — Precision materials and display glass handling
- **Major Battery & Electronics OEM** — Coating width measuement in electrode coating and display manufacturing
- **Consumer Products Leader** — Packaging and converting operations

These companies chose Roll-2-Roll Technologies because our technology delivers measurable results: **50%+ reduction in downtime**, **20%+ reduction in material waste**, and **payback periods under 6 months**.

Our Roots: From Research to Reality

Roll-2-Roll Technologies is a spin-off of **Oklahoma State University (OSU)**, home of the **Web Handling Research Center (WHRC)**—one of the world's premier institutions for the study of web dynamics, tension control, and roll-to-roll processing.

Our founders didn't just study web handling—they helped *define the science*. Their research on lateral dynamics, longitudinal tension control, winding mechanics, and print registration has been published in peer-reviewed journals and cited by engineers worldwide. This academic foundation means Roll-2-Roll Technologies products aren't based on trial and error—they're based on **fundamental physics**.

Research-Backed Innovation

- **NSF-funded research:** Core technology developed with National Science Foundation support
- **Patented technology:** Intellectual property protecting our unique fiber-optic sensing approach
- **OCAST partnership:** Continued R&D through Oklahoma's technology advancement program
- **Industry recognition:** Our team is recognized by both academia and industry for technical contributions to web handling science

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What We Do

Roll-2-Roll Technologies provides precision sensing and control solutions for roll-to-roll manufacturing processes across industries:

- **Web Guiding:** Edge, center, and line guiding systems that eliminate misalignment and reduce waste
- **Edge Detection:** Fiber-optic sensors that detect any material edge—clear, opaque, metallic, or porous
- **Width Measurement:** Real-time monitoring with ±0.127 mm repeatability at production speeds

- **Splice Detection:** Identify tape splices, overlaps, and material joints to prevent downstream issues
- **Retrofit Solutions:** Drop-in replacements for legacy systems with modern performance

Industries We Serve

Our technology operates across diverse industries where precision matters:

- **Battery Manufacturing** — Electrode coating, calendering, separator handling
- **Converting & Packaging** — Slitting, rewinding, laminating, printing
- **Nonwovens & Hygiene** — Diaper lines, spunbond, meltblown
- **Specialty Films** — Optical films, barrier films, release liners
- **Paper & Tissue** — Converting, coating, printing
- **Metals** — Foil processing, coil handling, strip guiding
- **Tire & Rubber** — Calendering, sheet guiding, component handling

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Ready to Simplify Your Web Handling?

Whether you're struggling with a difficult material, looking to reduce calibration downtime, or ready to replace a legacy system, we're here to help.

Talk to an Engineer: Get technical answers from experts who understand web dynamics, not just salespeople.

Request a Quote: Tell us about your application and we'll recommend the right solution for your line.

See It in Action: Watch our sensors handle your material type in our video library, or schedule a demo.
