

How to Win an R&D 100: A Judge's Perspective

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Conduct of Research Webinar

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History of the R&D 100 Awards



- The R&D 100 Awards have a 50+ year history of recognizing excellence in innovation.
- Dubbed the “Oscars of Invention”.
- Winning an R&D 100 Award provides recognition for new technology innovations and shines a spotlight on newborn technology helping it compete in the marketplace.
- The award provides a mark of excellence known to industry, government, and consumers.

What's in it for me?

- More than just bragging rights.
- Publicity, market boost, and a mark of excellence for your technology and team.
- Publication of your technology at www.rdmag.com
- Profile of the winning technology in the special commemorative R&D 100 Awards issue of *R&D Magazine*.
- Presentation of the award at the **R&D 100 Banquet and Awards Presentation**, a black-tie gala in November.
- A commemorative R&D 100 award that marks the achievement.



What I learned as a Judge

- Judged 17 R&D 100 technologies. Scoring is 1-10 points.
- Out of 17 technologies judged, 11 were chosen as finalists.
- All technologies with a score of 8 or higher made the finals, with the exception of one... so lets talk about the one.

So you get a high score and don't make the finals. What gives?

- Technology scope of use too narrow in industry.
- Technology too close in design to previous generation, no new *WOW*.



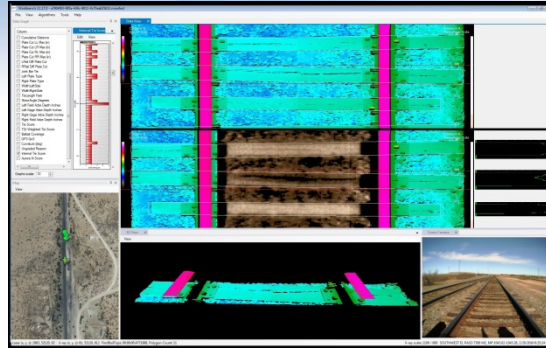
The CIRRIS XI™ and CIRRIS XR™ Robotic System for Large Diameter Cast Iron Gas Main, UK gas network, SGN and ULC Robotics, Inc.

Special Recognition Award Finalist

What makes a winner?

1. It's all about the Technology!

- Technology that has changed the game in any industry.
- No matter what the specific product or service is, the focus should be on impact.
 - Will my technology leave the world a better place than I found it?
 - Why is my technology better than sliced bread?
 - If you and your team don't say, wow, don't expect a judge to.



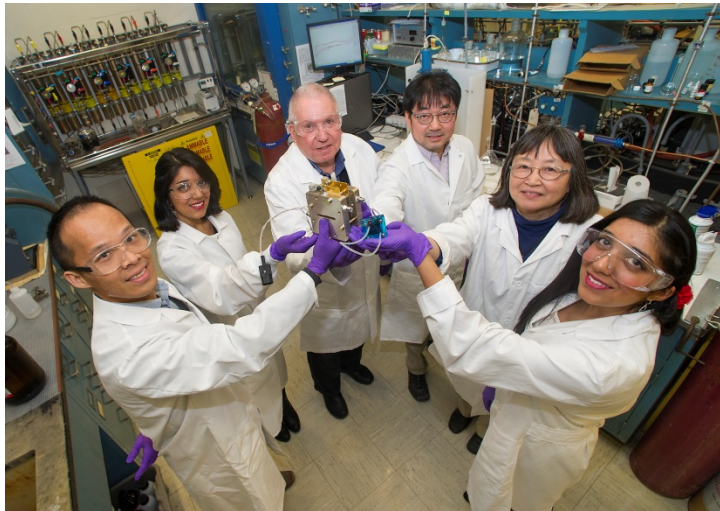
Aurora Xi

X-ray backscatter system that detects density changes in wood cross ties at speeds up to 25 miles per hour.

Special Recognition
Awards
Market Disruptor - Services



2. Assume your judge may not be an expert in the field of your technology...the devil maybe in the details, but he's in the weeds too!



- Too much detail is just as bad as too little.
- Stick with the importance of your technology, and keep detailed equations in supporting information such as a journal paper.
- Final judges, those that chose the winners from the finalists, may not be technical experts in your field and you are in it to win it!
- Bullets are great for highlighting the really important features, or differences from others, of your technology.

Polyelectrolyte Enabled Liftoff (PEEL), LLNL



8. How it works: What's the benefit, and why should I care ...aka, how to impress a judge.

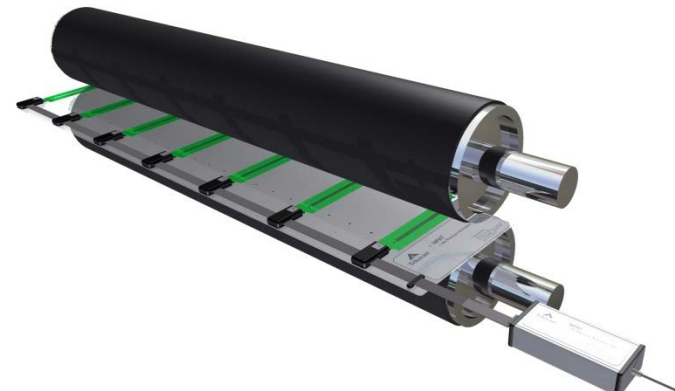
- Why is your technology important...did you build a better mouse trap, or just change the spring?
- Get to the point fast. You're not writing a conference or journal paper.
- Stay out of the weeds when it comes to jargon.
- Does your technology have a patent or patent pending?
- Technologies are not externally judged against each other in a category...but will be in the finals.

Process/Prototyping



Score 9

NPAT - Pinch Roller Nip Width Measurement System, Tekscan, Inc.










3. Color is good. Easy to pick out important differences.

- Matrix Charts (comparing your product to others) are very important and, more often than not, the 1st or 2nd item a judge looks at in the submission.
- Matrix Charts are not fun to create, so they often reflect a sterile, analytical approach to writing them.
- More than just a chart, this information tells a judge why your technology is better and more worthy than the other guys.
- When you're up against the best of the best, going the extra mile on even the smallest items can mean the difference between a score of 9 or 10.

	PEEL	Competing methods			
		Sacrificial layer (sputtered)	Sacrificial layer (other)	Specialty substrates (e.g. mica)	Other surface modifications
Film strength	Excellent	Poor	Poor	Excellent	Fair
Film area scalability	Yes	No	Fair	No	Yes
Simplicity	Yes	No	Yes	Yes	Yes
Film thickness	<10 nm	>20 nm	>20 nm	>20 nm	>50 nm
Manufacturing Scalability	Excellent	Poor	Fair	Poor	Good
Reusable substrate?	Yes	No	No	No	No
Contaminate film?	No	Yes	Yes	No	Yes
Contaminate water?	No	Yes	Yes	No	Yes
Maintains smoothness of deposition substrate?	Excellent	Fair	Fair	Excellent	Excellent

Which one is more eye catching and easy to read?

Feature Comparison							
measurement sensors for ties						Aurora X ⁱ	
							
	Walking Inspector	Optical Inspection	GPR	Eddy Current	Ultrasound	Laser Profiling	X-Ray
Track Speed	1.5 mph	30+ mph	20+ mph <small>* Bullet Inspection</small>	Walking Speed	62 mph <small>* Rail Inspection</small>	30 mph	25 mph
Height Measurements	Limited	No	No	No	No	12.5 ppi	No
Depth of Penetration	0	0	3+ inches	<1 inch	3+ inches <small>* Steel</small>	0	3+ inches
Standoff Distance	0	> 14 inches	> 14 inches	<1 inch	<1 inch	> 14 inches	> 14 inches
Resolution	N/A	Good	Poor	Good	Poor <small>* Wood Applications</small>	Good	Good
Asset Inventory	Yes	Yes	No	No	No	Yes	Yes

6. Letters of support; yes, no, maybe?

- Letters of support are optional, and a young technology may not have industry support yet.
- Letters from within your team (for example, university or national laboratory partners) don't carry much weight.
- Having no letter of support is better than having a letter with no dog in the hunt.
- Gold standard for letter of support...your state's governor!

Score 10

Analytical/Test



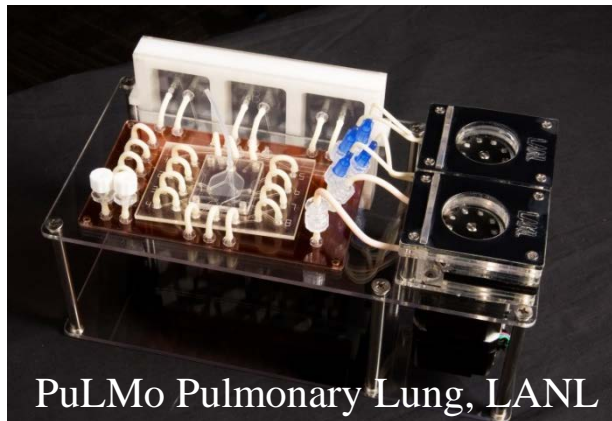
Score 9

Process/Prototyping



9. Video and photos

- Videos are optional, but it is the first place a judge will look to get a feel for the technology.
- If you make a video, make it easy to understand, narrated, and short.
- Yes, judges will watch the video before reading your submission!



- Get to the point in 3 minutes or less
- Three videos on the same subject is overkill!
- A video of your technology working, without benefit of explanation, is a waste of a judge's time.
- Keep it simple, but to the point. A video that is heavy in theory will not impress someone who is not a subject matter expert.

Videos that made an impression...

GREZ Aurora XI-YouTube

Voxel8-The world's First 3D Electronics Printer-YouTube

10. WOW me!



- What does the *Wow* factor really mean?
 - “Technology that provides simple, elegant solutions to complex problems—products that are so interesting, unusual, or clearly superior to existing technology that they make you say *wow!*”*
- Importance of benefits...don’t get lost in the technical weeds.
- As a judge, the technology that prompted me to say “now that’s cool,” is the kind of response you want.
- Defining the technological quantum leap moment will net you a 10 every time.



*From, “how to win an R&D 100 Award”.

Summary of what I learned as a judge:

- First impressions, the *Wow* factor, set the stage for an exciting technology in a judge's eyes.
- KISS, don't get so caught up in the technical aspects you miss the big picture of how industry and world will benefit.
- It never hurts to go the extra mile, but if you do, make sure it is helping you paint a picture of excellence.
- Beware of being too unique and make sure you see all the possibilities.
- Let your ideas, and the technology they produce, shine!



September

- Technology Deployment (TD) Releases a Lab-wide call for potential nominees

November

- TD assembles review committee and selects nominees based on R&D 100 Award criteria

Dec - April

- INL nomination packages prepared with support from TD and Communications

January

- Early Bird deadline

April

- Entry deadline

July

- Finalist announced

November

- Banquet and Conference

Technology eligibility requirements

Any new technical product or process that was first **available for purchase or licensing between January 1 of the previous year and March 31** of the award year.

Proof-of-concept prototypes **do not qualify**; the submitted entry must be in working, marketable condition.

If the product requires regulatory approval, such as a drug or medical device, it must have completed all trials and received approval for marketing by a governing regulatory authority such as the U.S. Food and Drug Administration or international counterparts.

In some cases, existing technologies are purchased by third parties who then conduct the sales efforts.
Marketing efforts do not qualify. If the original developer is included in the entry, the candidate product is considered valid by the editors.

Award categories

Mechanical Devices/Materials

IT/Electrical

Analytical/Test

Process/Prototyping

Software/Services

Special Recognition Awards

Questions and Support:
Contact Technology Deployment's
Communication Program Liaison,
Jennifer Eisenbeis. 526-1149.



A large audience is seated in a grand hall, facing a stage. The stage features three large screens displaying the '2015 R&D 100' logo. The hall is illuminated with blue and red stage lights, and several ornate chandeliers hang from the ceiling. A large, stylized, swirling pattern is projected onto the right wall. The word 'Questions?' is overlaid in white text on the lower half of the image.

Questions?