

# Writing an Effective R&D 100 Nomination



Mark Jones  
*Executive External Strategy and Communications Fellow*



**R&D 100**  
**CONFERENCE**

DECEMBER 4-5, 2019

San Mateo, CA

# Communications Hierarchy

---

Tools  
Tactics  
Strategy  
Audience  
Goal

# Goal

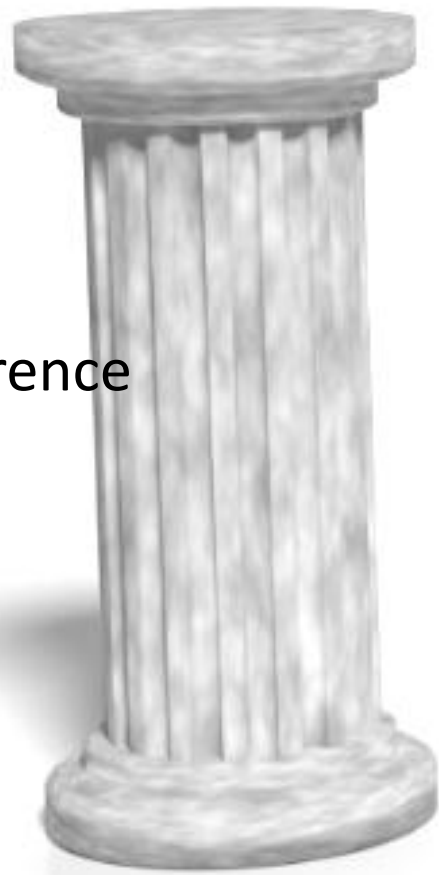
---



- goal is to win
- requires knowing what it takes to win
- know what matters

## Impact

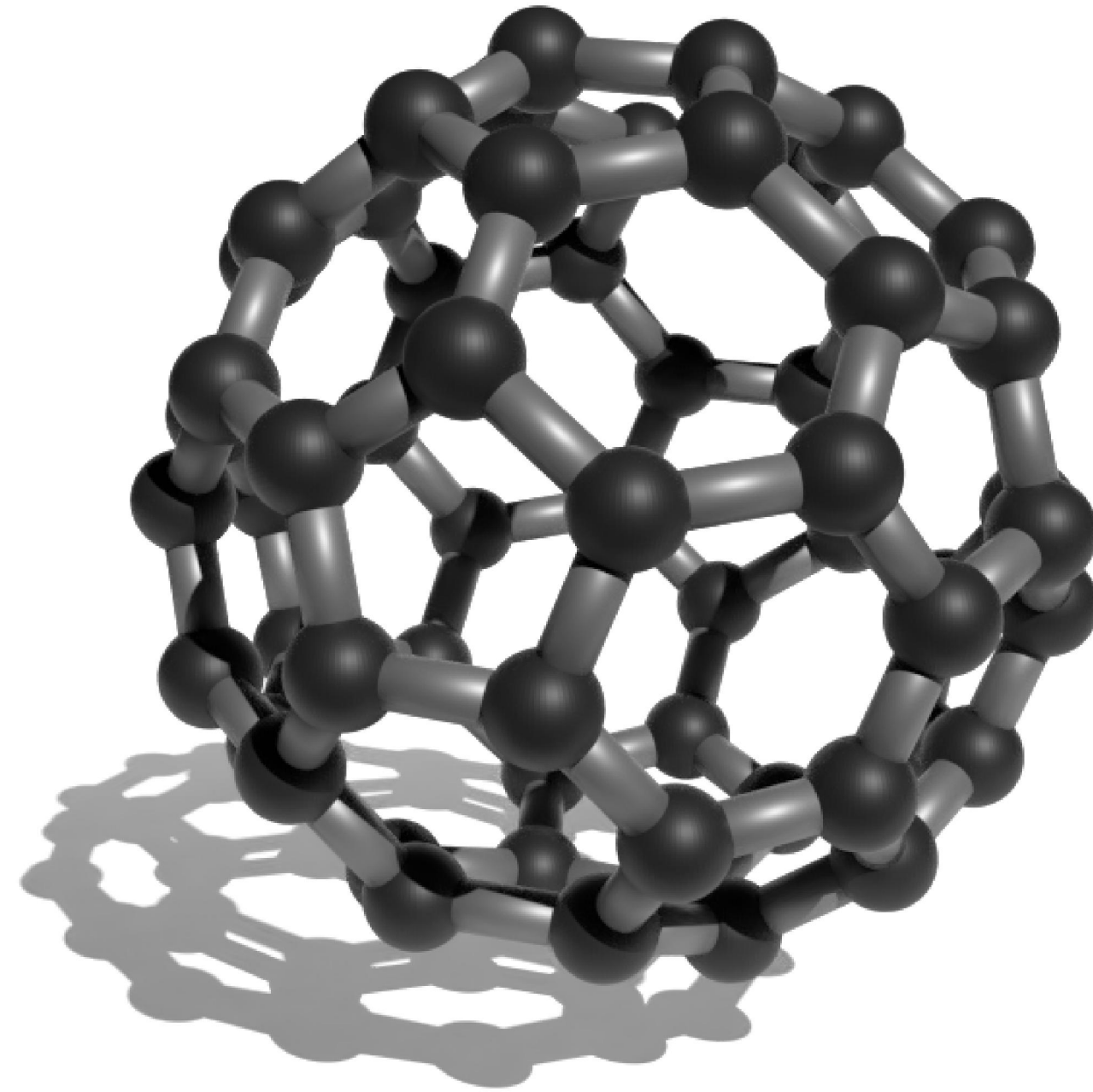
- in use
- making a difference



## Invention

- not obvious
- not evolutionary
- inspired





---

**R&D 100**  
**CONFERENCE**

DECEMBER 4-5, 2019

SAN MATEO, CA





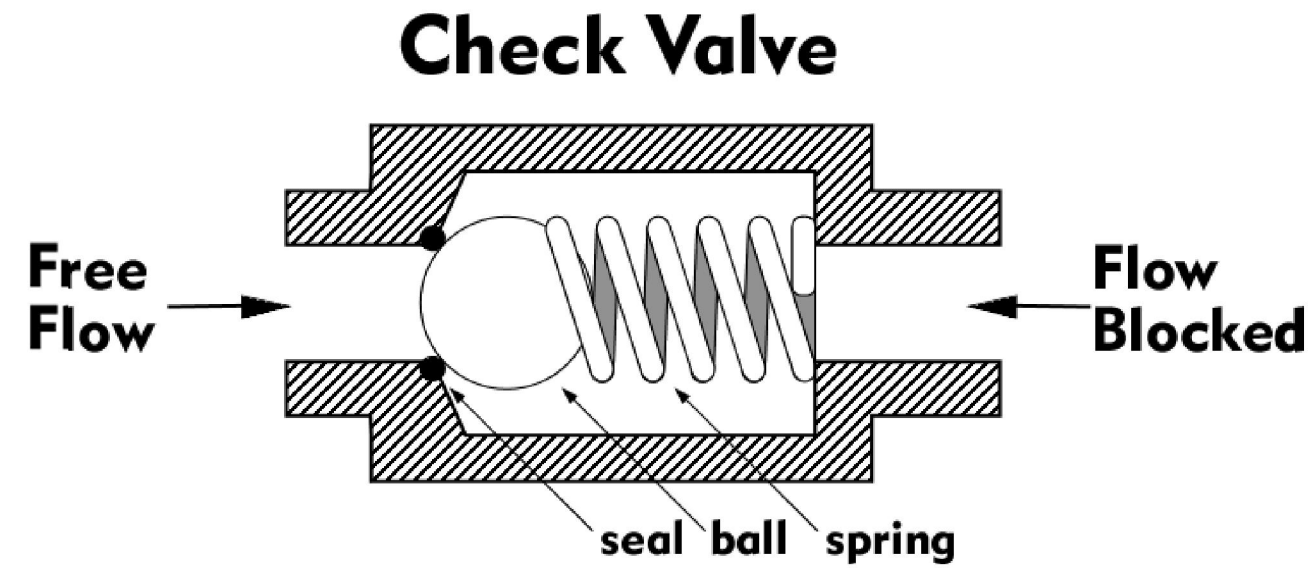
---

**R&D 100**  
**CONFERENCE**

DECEMBER 4-5, 2019

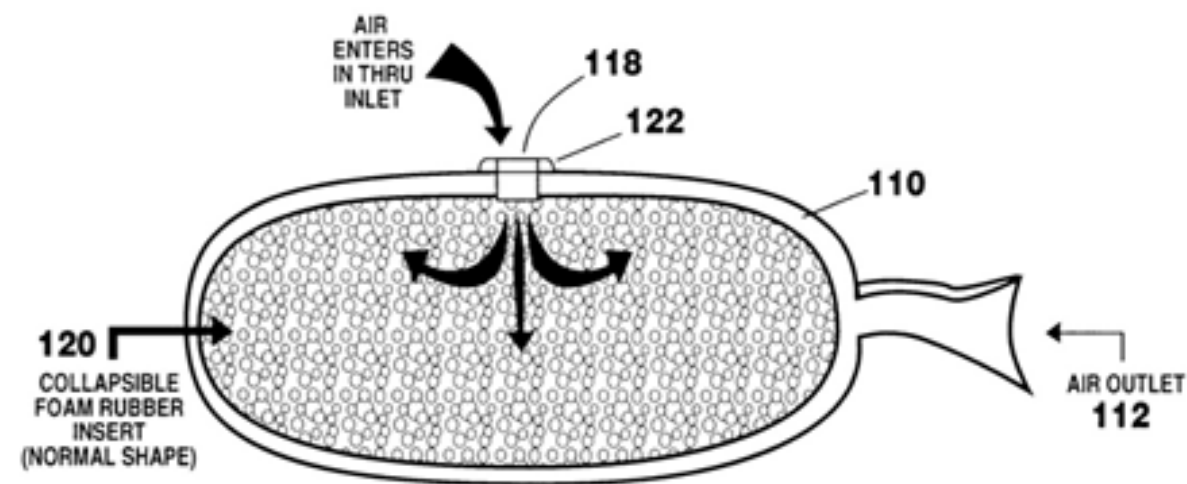
SAN MATEO, CA





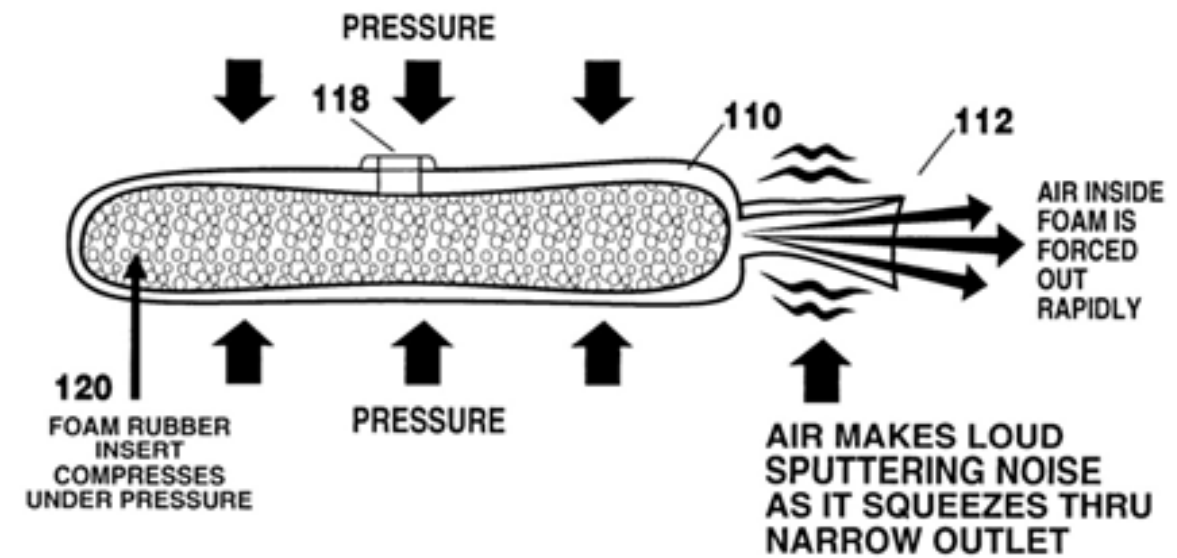
**Fig. 3**

**CROSS SECTION -  
NORMAL INFLATED STATE**



**Fig. 4**

**CROSS SECTION - COMPRESSED STATE**



U.S patent 6,331,131 granted in 2000 to Russell Morris Selevan is for the "Self inflating noise maker"

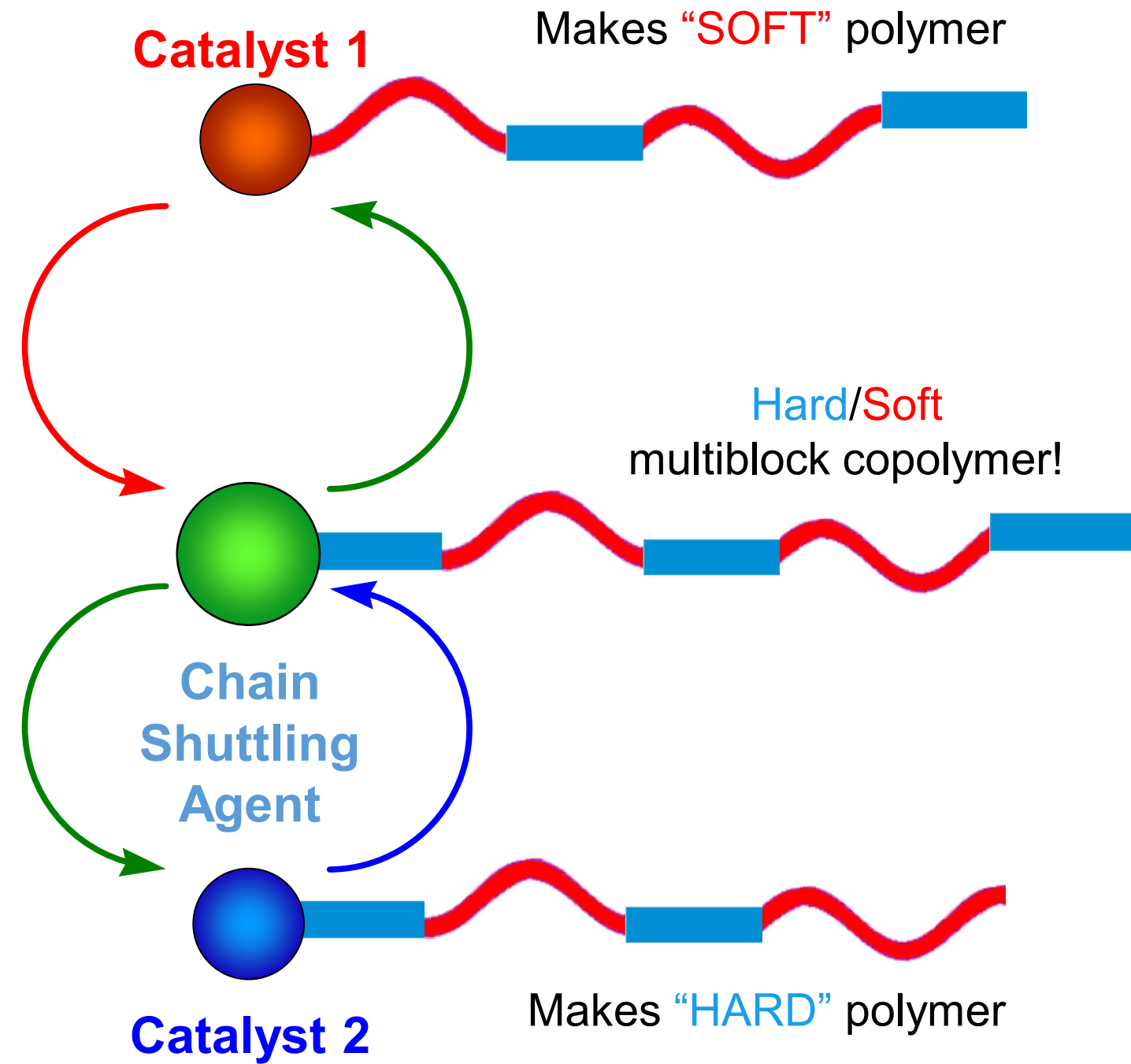


# Block Copolymers

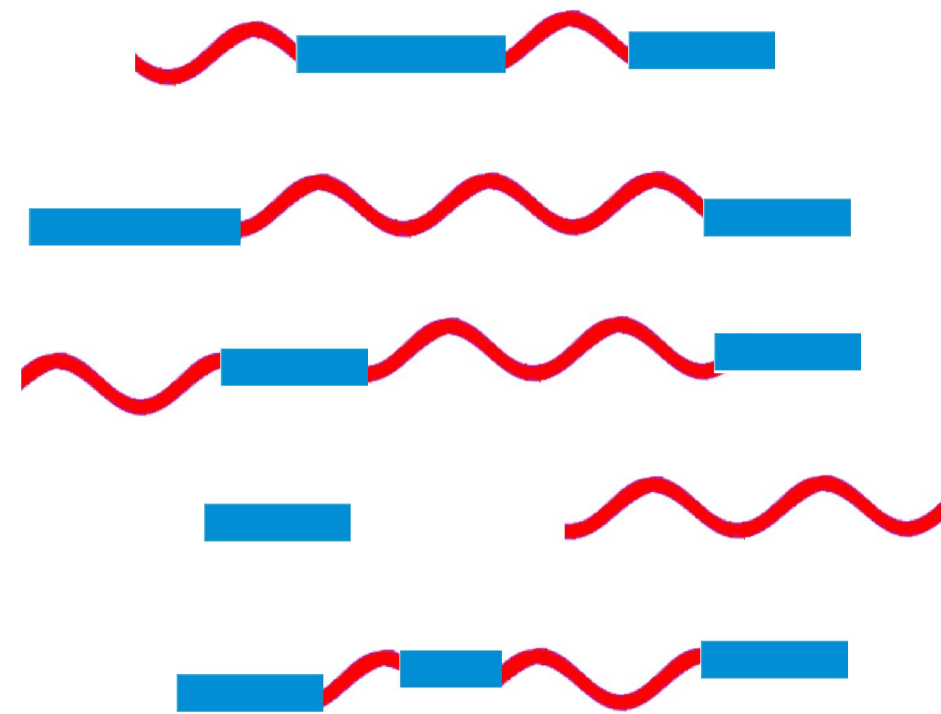
---



# Olefin Block Copolymers



Chain shuttling generates a  
**HARD/SOFT**  
multiblock copolymer via  
cooperative catalysis!

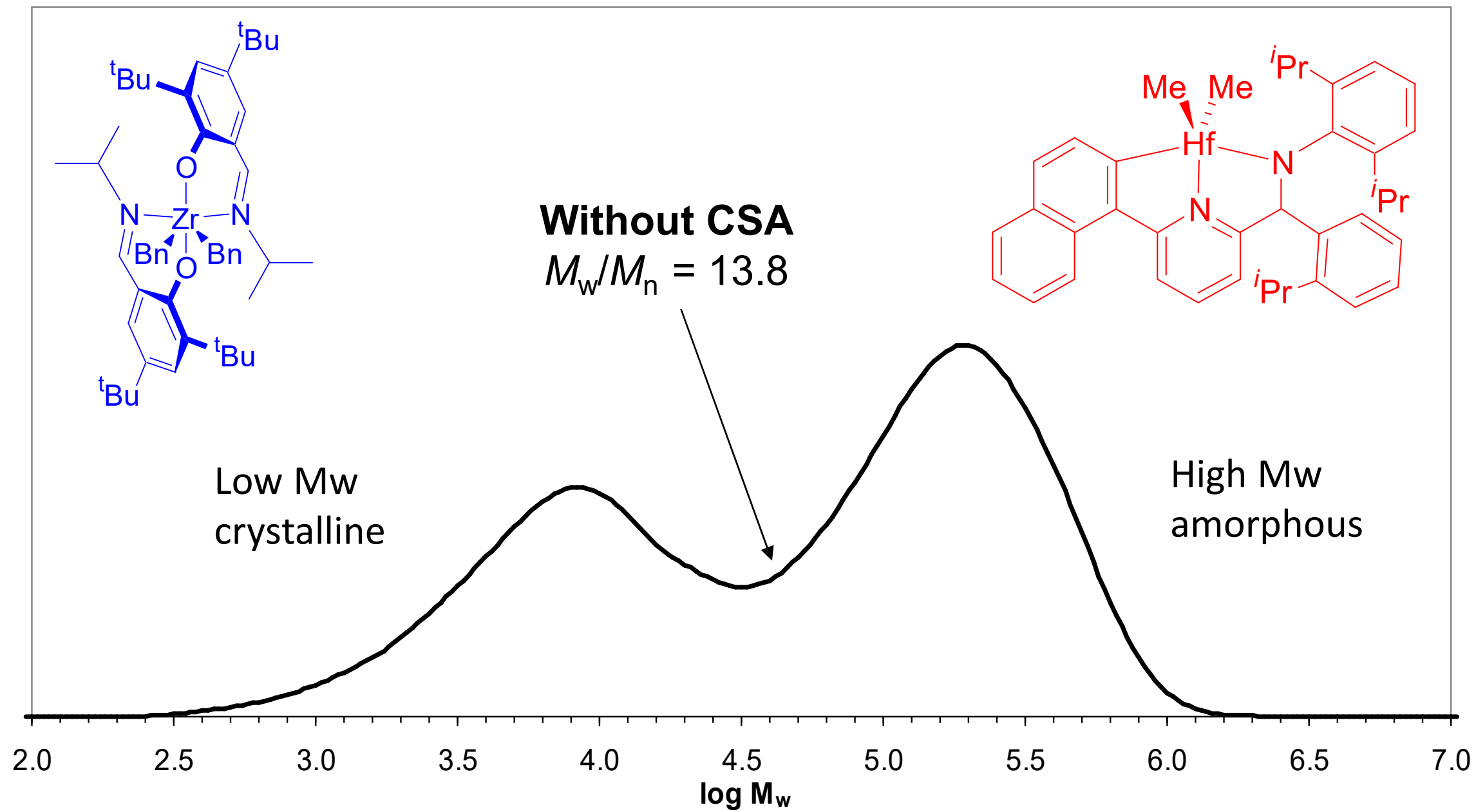


Arriola, D. J.; Carnahan, E. M.; Hustad, P. D.; Kuhlman, R. L.; Wenzel, T. T. *Science* **2006**, 312, 714.



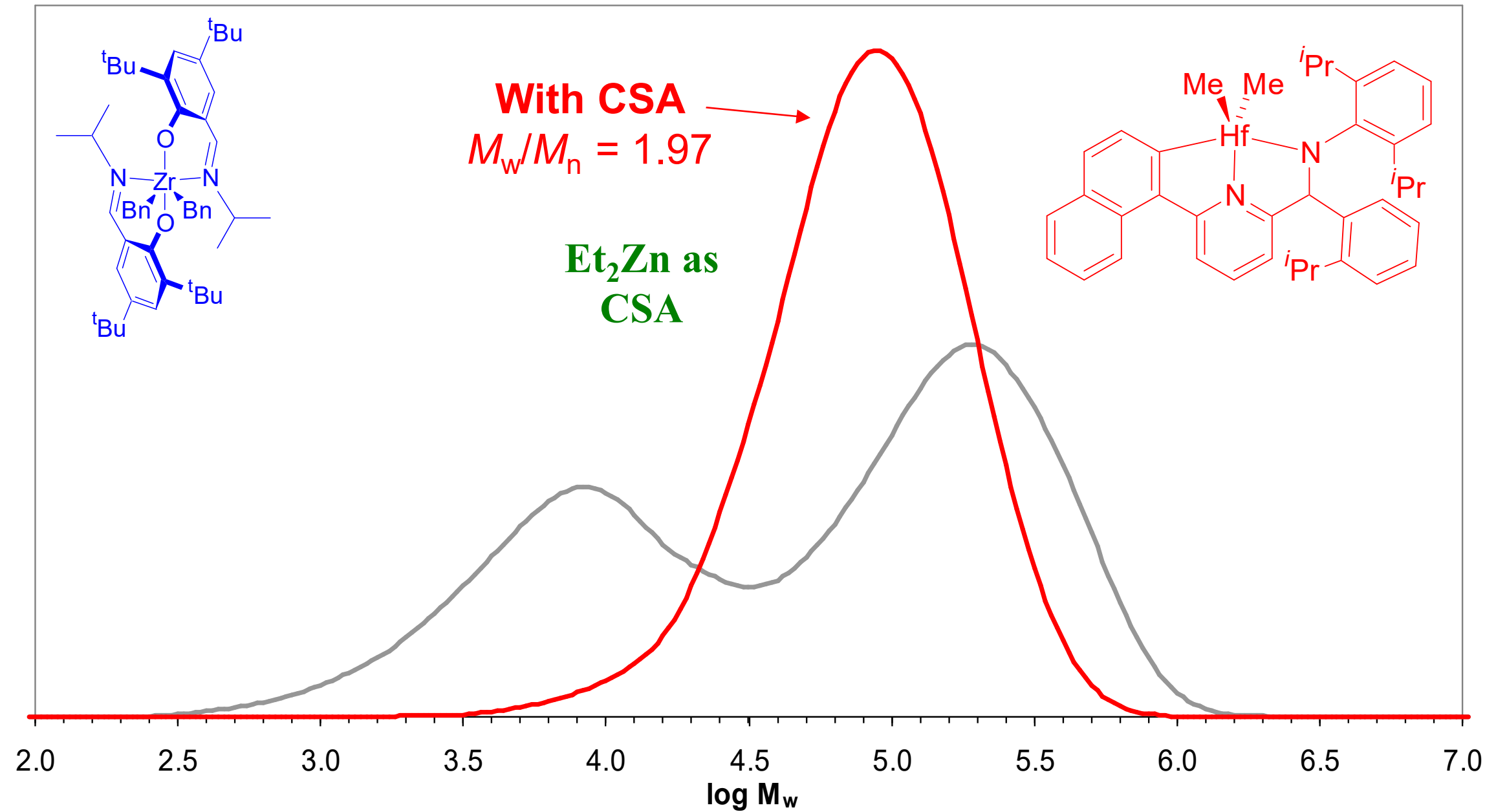
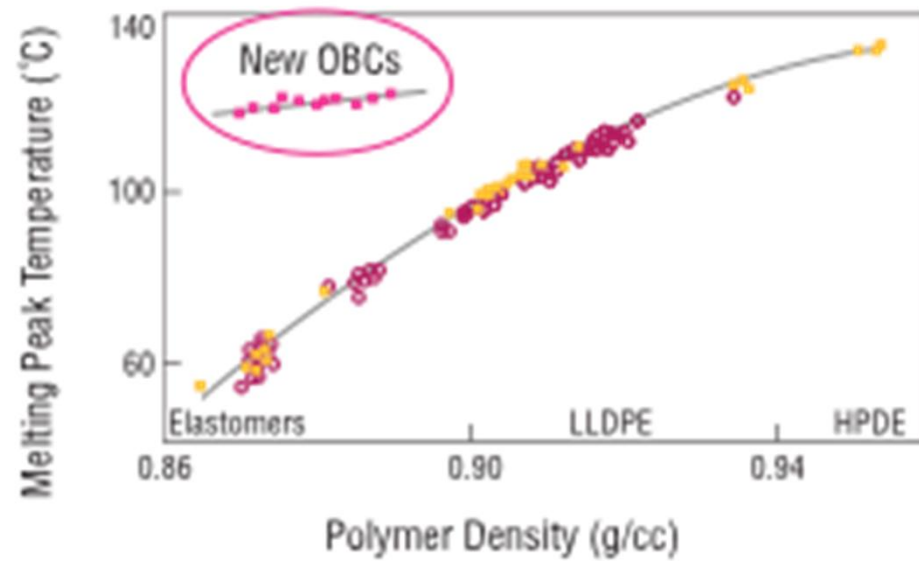
# Olefin Block Copolymers

## GPC Molecular Weight Without Chain Shuttling Agent

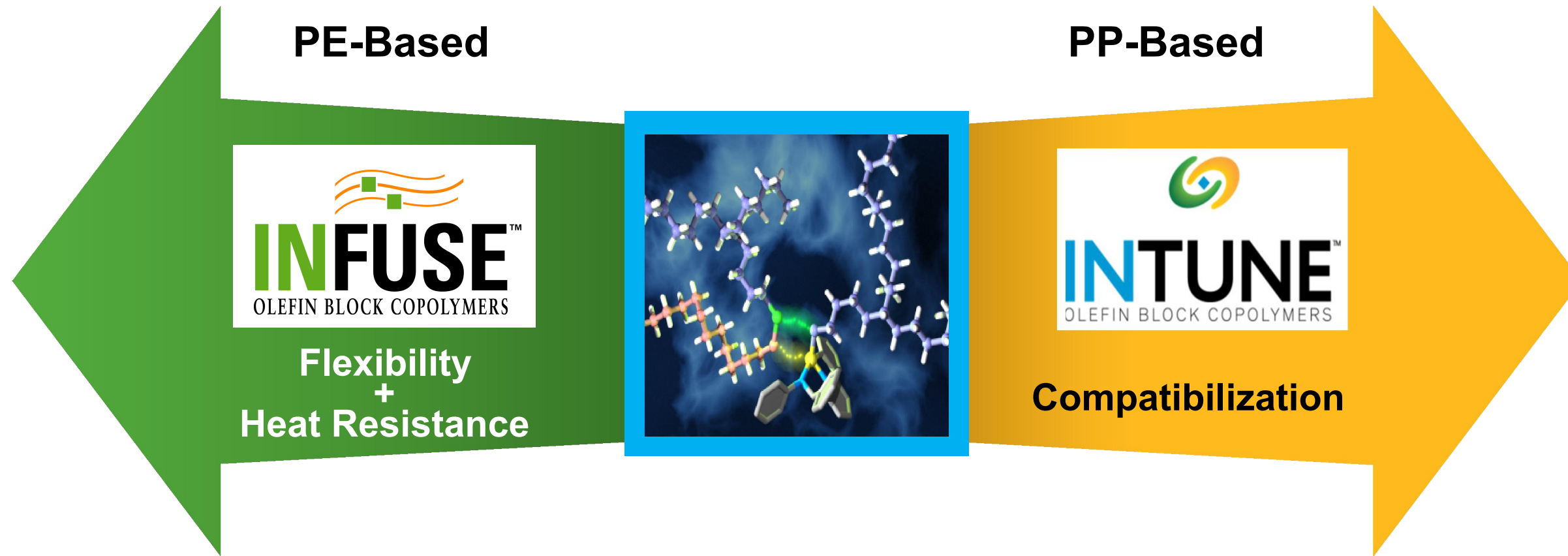


# Olefin Block Copolymers

## Same Experiment with Added Chain Shuttling Agent



# Olefin Block Copolymers



New-to-the-world combinations of performance advantages that addresses unmet needs for a wide range of global market applications



2009

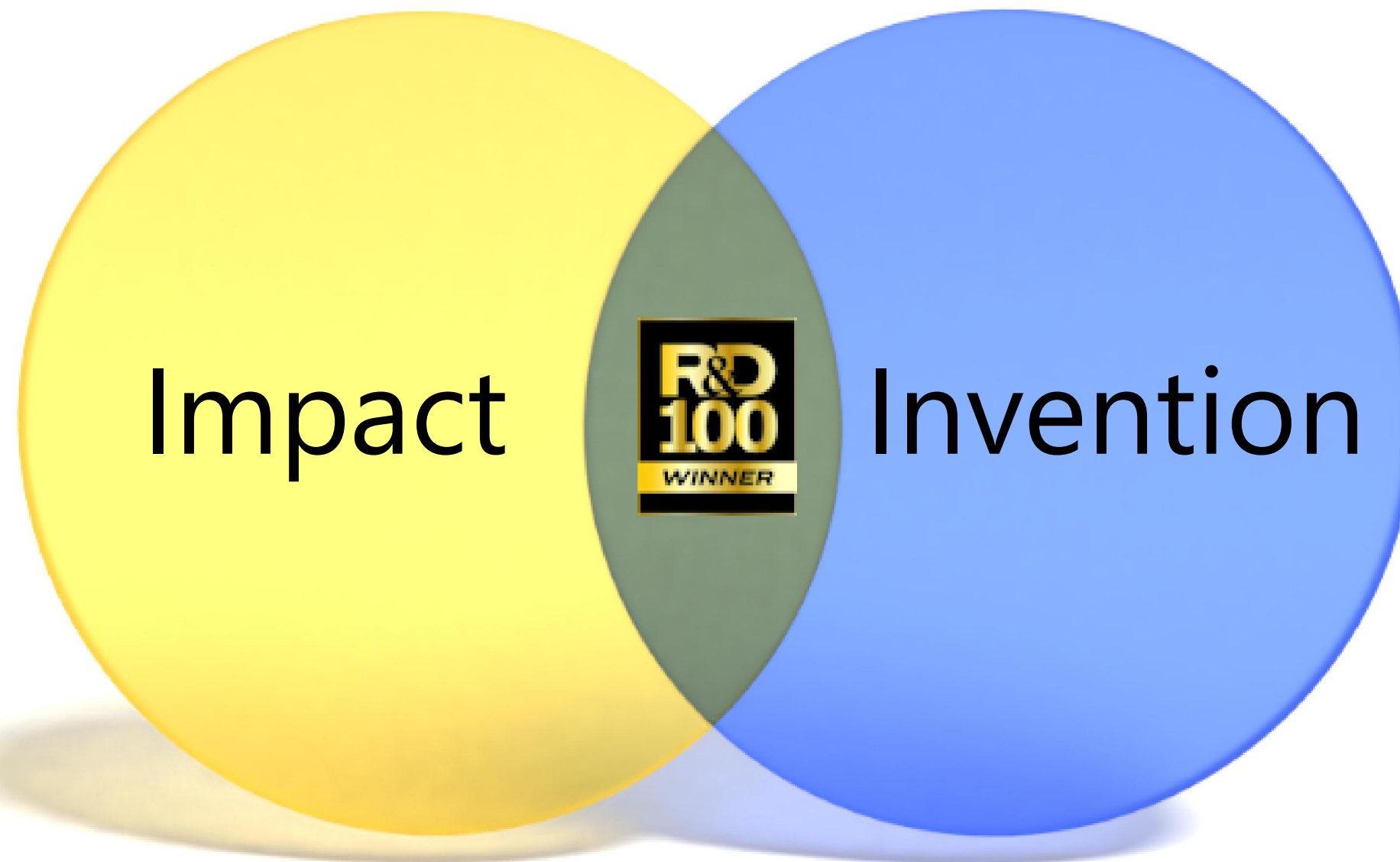


**R&D 100**  
CONFERENCE

DECEMBER 4-5, 2019

SAN MATEO, CA



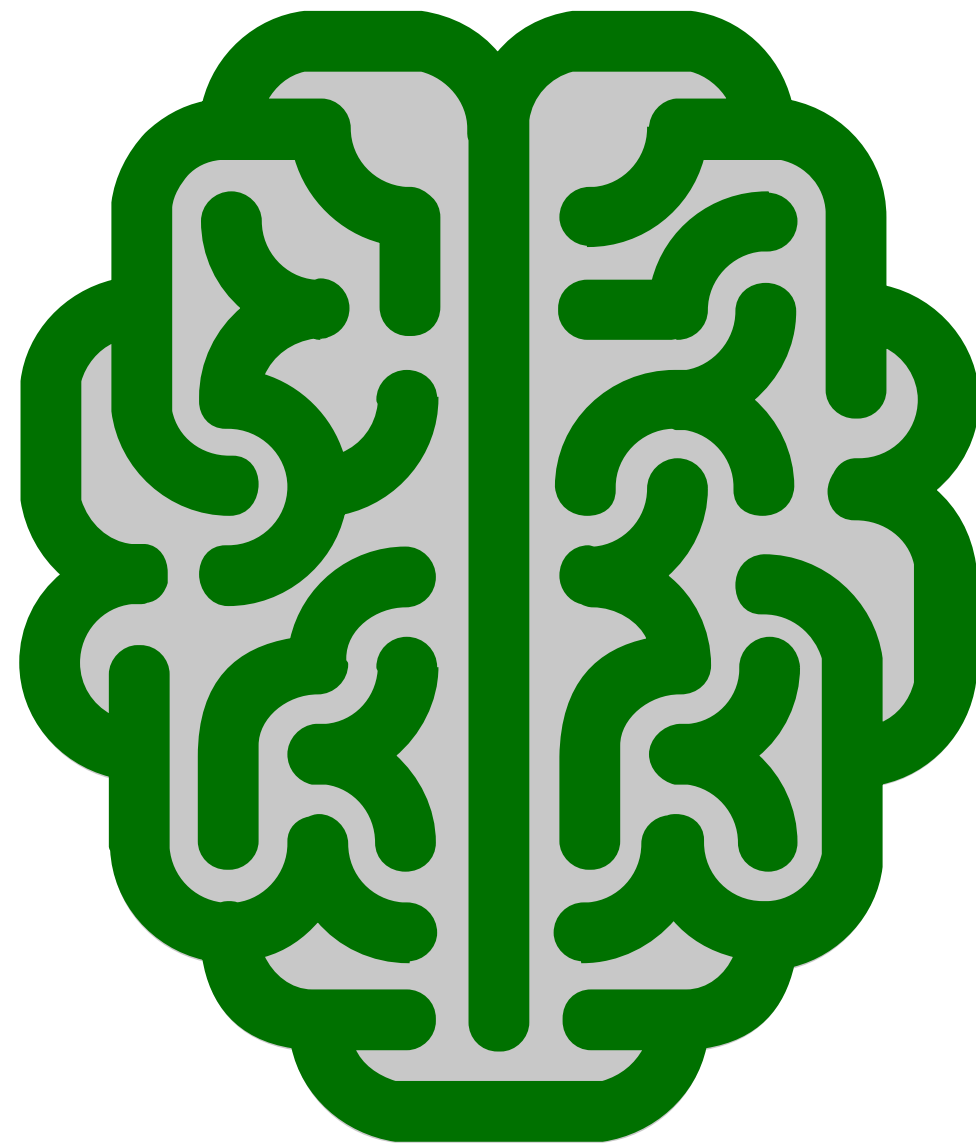


# Audience

---



- generalists, not experts in every field
- review many
- focused on innovation (impact and inventiveness)



# ready

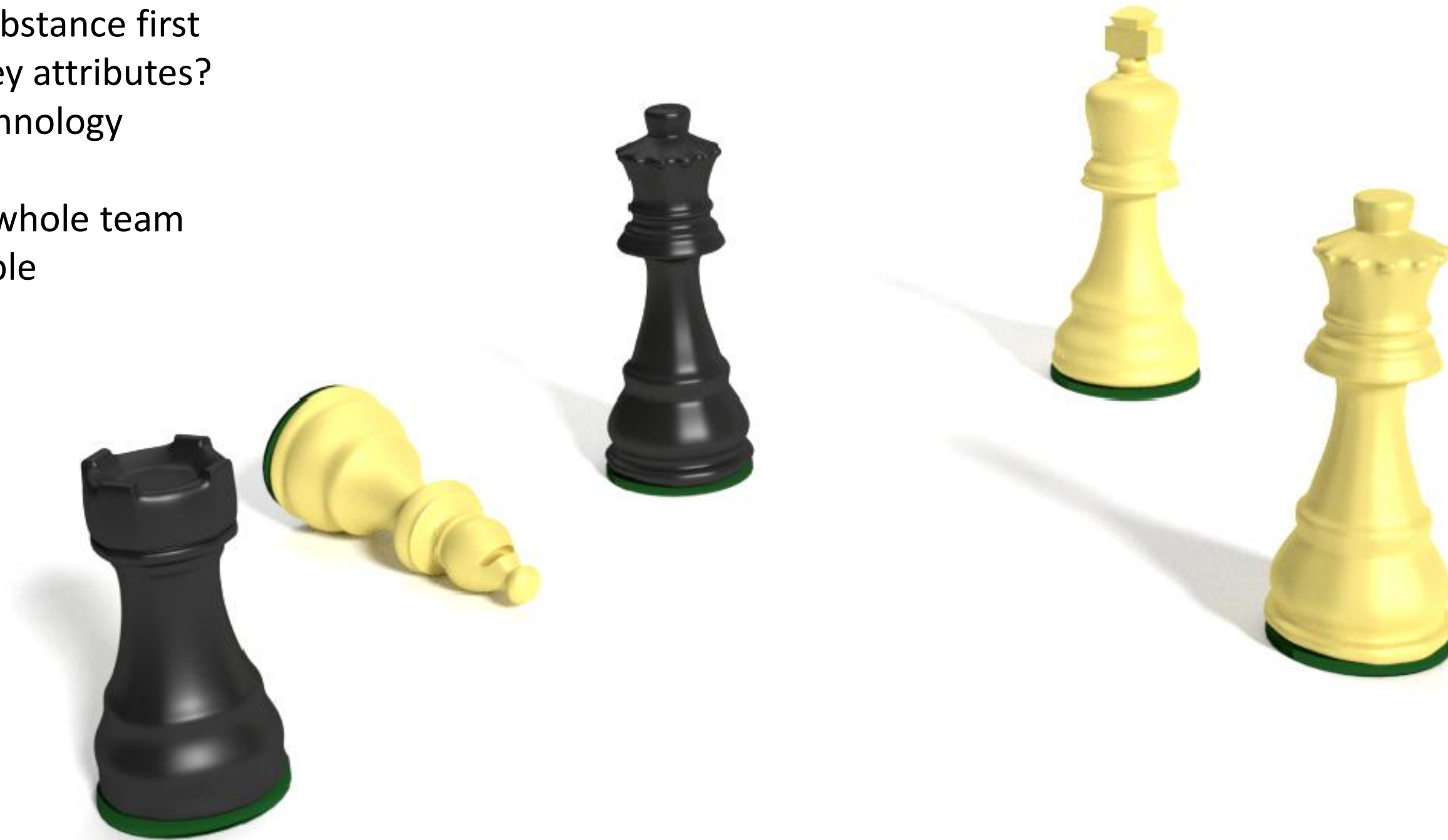
- memorable is better than forgettable (pics memorable)
- make graphics *mind ready*
- info density right for material and audience



# Strategy

---

- focus on substance first
- what are key attributes?
- *sell* the technology
- compelling
- talk about whole team
- approachable
- concise

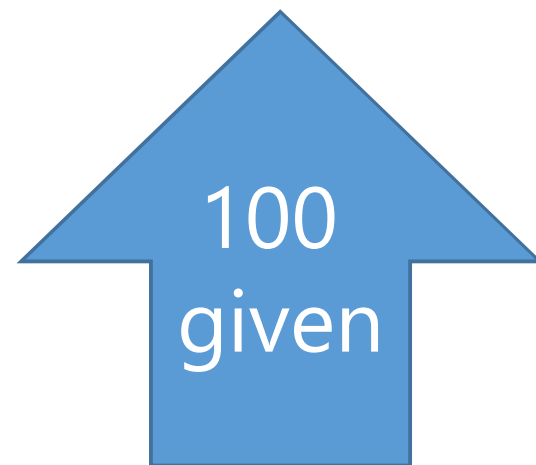


# Strategy: Select Award Category

---

## **R&D 100 Awards Categories**

- Analytical/Test
- IT/Electrical
- Mechanical/Materials
- Process/Prototyping
- Software/Services
- Other



## **R&D 100 Awards: Special Recognition Awards**

- Corporate Social Responsibility
- Green Tech
- Market Disruptor - Products
- Market Disruptor - Services

# Impact

- show it provides a benefit
- detail key differentiating attributes
- show the product is *real*
- show it is in use

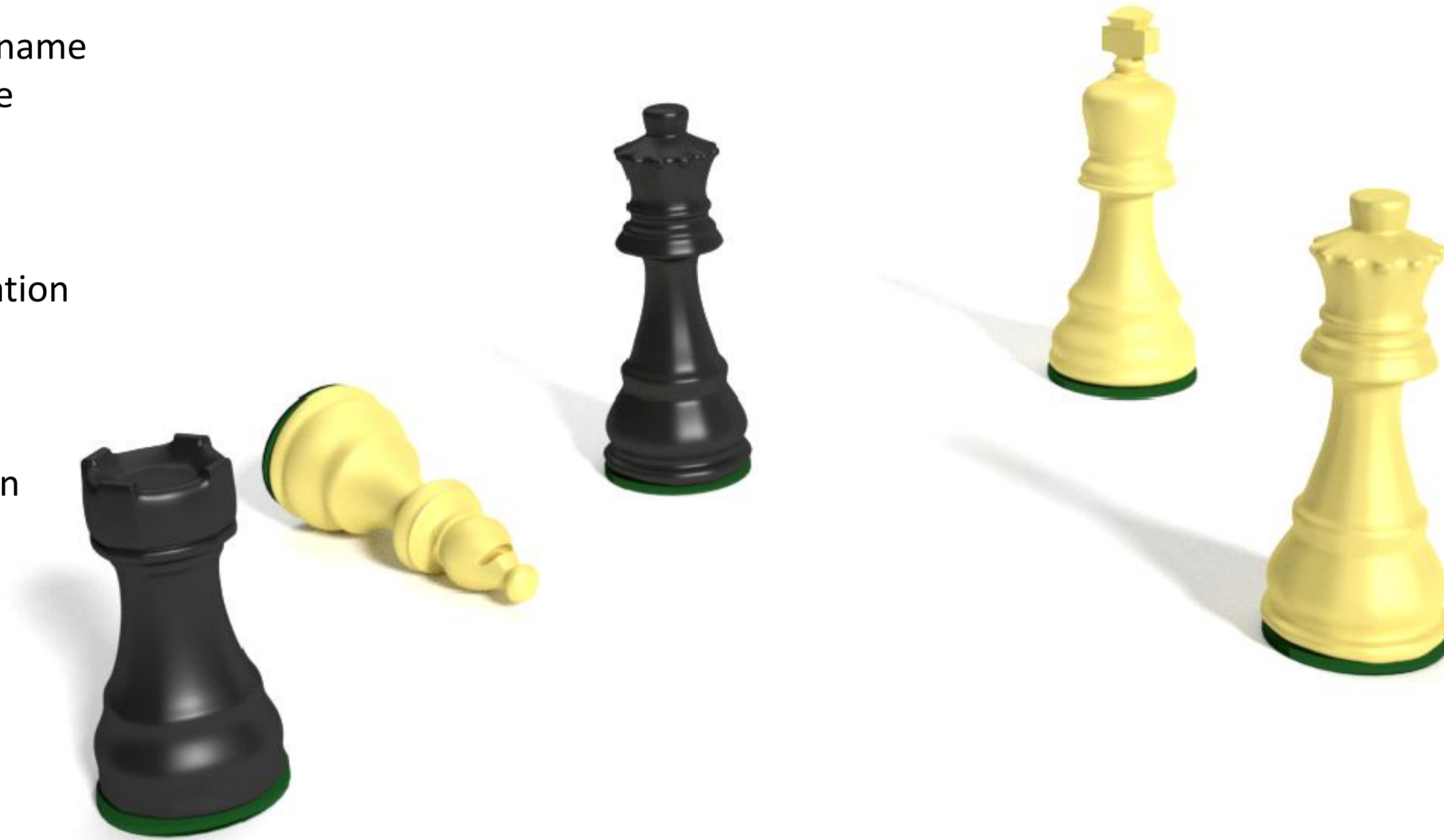
# Invention

- describe how the product was conceived
- explain how it was brought to market
- discuss how it is unexpected
- describe team effort

# Tactics

---

- use product name
- present tense
- powerful
- concise
- simple
- avoid duplication
- figures
- captions
- video
- upload option





# Completing the Form

---

Short description of the product

- Please supply a short description of your product/service. (Please limit your answer to 50 words or less.)

*think this through carefully and tell as much as you can in the 50 words*

*A place for creativity. Photos worth 1000 words. Videos worth more.*

4 photos

6 videos

*Can be detrimental if useless or repetitive. Think about what adds to the description of the products.*



**R&D 100**  
**CONFERENCE**

DECEMBER 4-5, 2019

SAN MATEO, CA



# Completing the Form: PRODUCT/SERVICE DETAILS

---

Product/service brand name

Please specify the product name as you would like it to appear on a potential award plaque.

*Products that are on the market have names.*

*You should use consistent naming throughout the application.*



# Tactics: Reinforce Product Is Real By Using Its Name

---

FERRALIUM 257™ surpasses the performance of all other alloys.

*versus*

The new product surpasses the performance of all other alloys.

# Completing the Form: PRODUCT/SERVICE DETAILS

---

## Price of product/service in U.S. dollars

- If possible, please indicate the price at which the product/service is offered for sale in the market.

*write something here to indicate pricing relative to the market served*

# Completing the Form: PRODUCT/SERVICE DETAILS

---

Check here to certify that this product/service was introduced to the market between January 1, 2017 and March 31, 2018.

- Yes
- No

If your submission is subject to regulatory approval, has this product been approved? If you select "No", your product cannot be considered for an R&D 100 Award.

- Yes
- No
- Not applicable to this product

# Completing the Form: PRODUCT/SERVICE DESCRIPTION

---

What does the product or technology do?

Describe the principal application(s) of this product.

How does the product operate?

Describe the mechanism of action, theories, materials, composition or construction

*this is the meat of the application and should be well-planned, simple yet concise and non-repetitive*

## Tactics: Structure Matters

---

Lead with what you want the reader to learn.

Follow-up with supporting information.

Tell the reader what you want them to learn again.

*Background is called background for a reason. It isn't the most important part.*

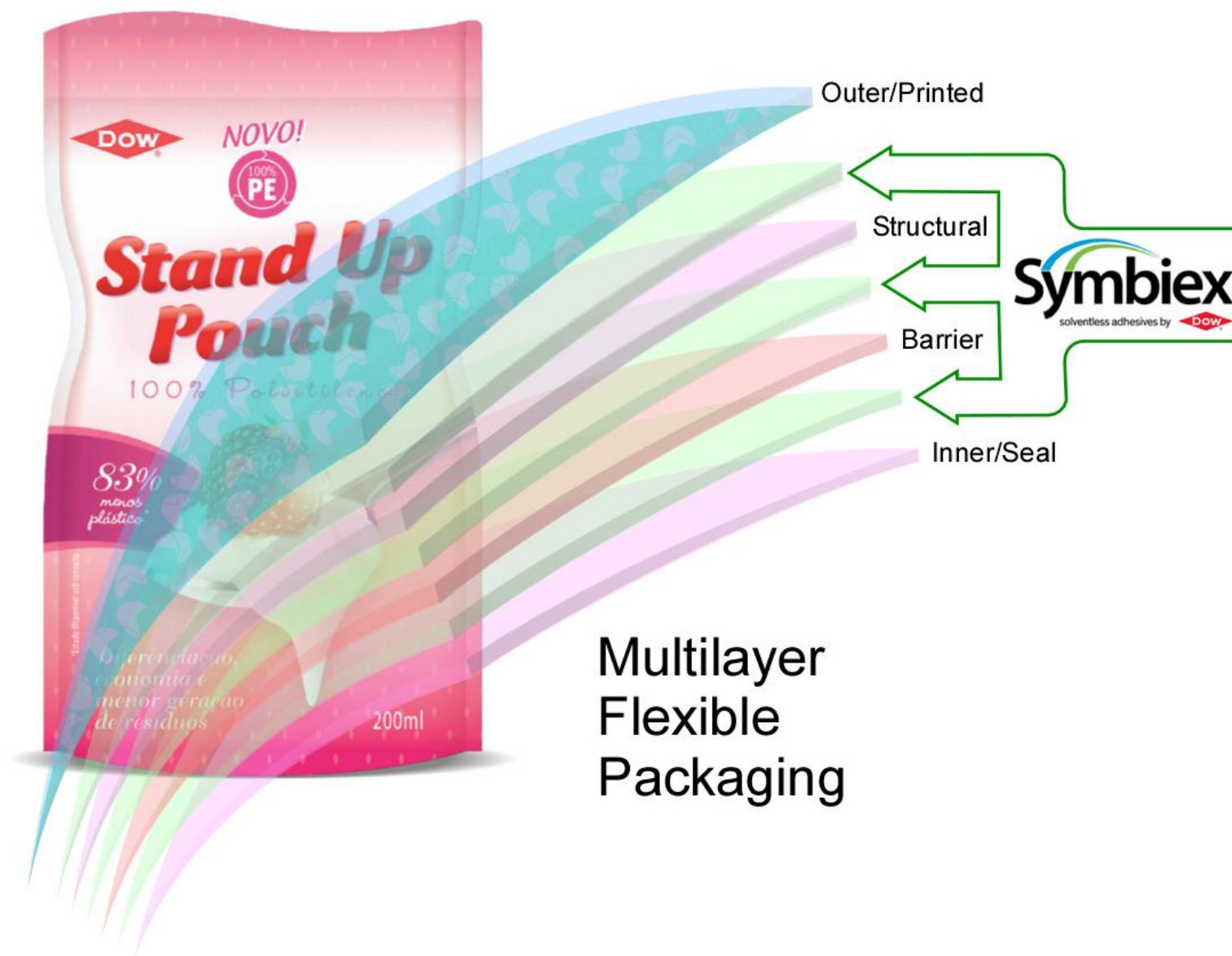
*Don't be overly repetitive.*

## Tactics: Use Figures To Simplify Explanations

---

Use figures to supply necessary background and clarify explanations for judges that are most likely not experts in your technology area.

Figures can simultaneously provide background and information about your product.



## Multilayer Flexible Packaging

Symbiex™ enables modern flexible packaging made by laminating multiple layers, each performing a different function. Symbiex™ dramatically improves the manufacturing of multilayer flexible films by improving the manufacturing speed and eliminating out-gassing present with incumbent adhesives.

# Completing the Form: PRODUCT COMPARISON

---

Describe how your product/service improves upon competitive products or technologies.

If possible, supply a **matrix or table showing** how the key features of your product compare to existing products or technologies.

Use numerical figures to represent performance metrics.

For price, and capital and operating costs, use actual dollar amounts or a relative scale to show a comparison.

Describe the limitations of your product/service. *Be honest.*



# Comparison Table



	GS Pack	Tesla Pack
Nominal Voltage, V	480	400
Nominal 5H Capacity, Ah	27	25
Nominal 5H Energy, Wh	12960	10000
Max Power at 15m, W	32800	3300
Size, L	114	201
Wt, kg	270	100
Warranty Years	10	10
Cost to Installer	\$1,750	\$3,500
Cooling System Req'd	No	Yes
End of Life Value	\$130	(\$200)
Uses Precious Metals	No	Yes

# Completing the Form: PRODUCT SUMMARY

---

## Summary of entry

Why do you feel your product/service deserves to be considered for an R&D 100 Award? (Limit: 175 words)

*should match the opening description  
must reinforce your main points*

## Support letters (optional)

*most powerful when from customers*



---

**R&D 100**  
**CONFERENCE**

DECEMBER 4-5, 2019

SAN MATEO, CA



## Tactics: Write Forcefully

---

Kryptonite stops the Man of Steel.

*versus*

Kryptonite could be used to stop the Man of Steel.

# Tactics: Tense Matters

---

Affinisol™ makes drugs more soluble.

*versus*

Affinisol™ has been shown to make drugs more soluble.

*versus*

Affinisol™ can make drugs more soluble.

## Tactics: Phrasing Matters

---

INNATE™ reduces the environmental burden of packaging by using less material while delivering better performance.

*versus*

Because it allows less packaging to be used, INNATE™ reduces the environmental burden of packaging.

# Tactics: Captions Are Your Friend

---

Attach captions to all pictures and figures.

Make captions complete.

# Tactics: Captions Are Your Friend

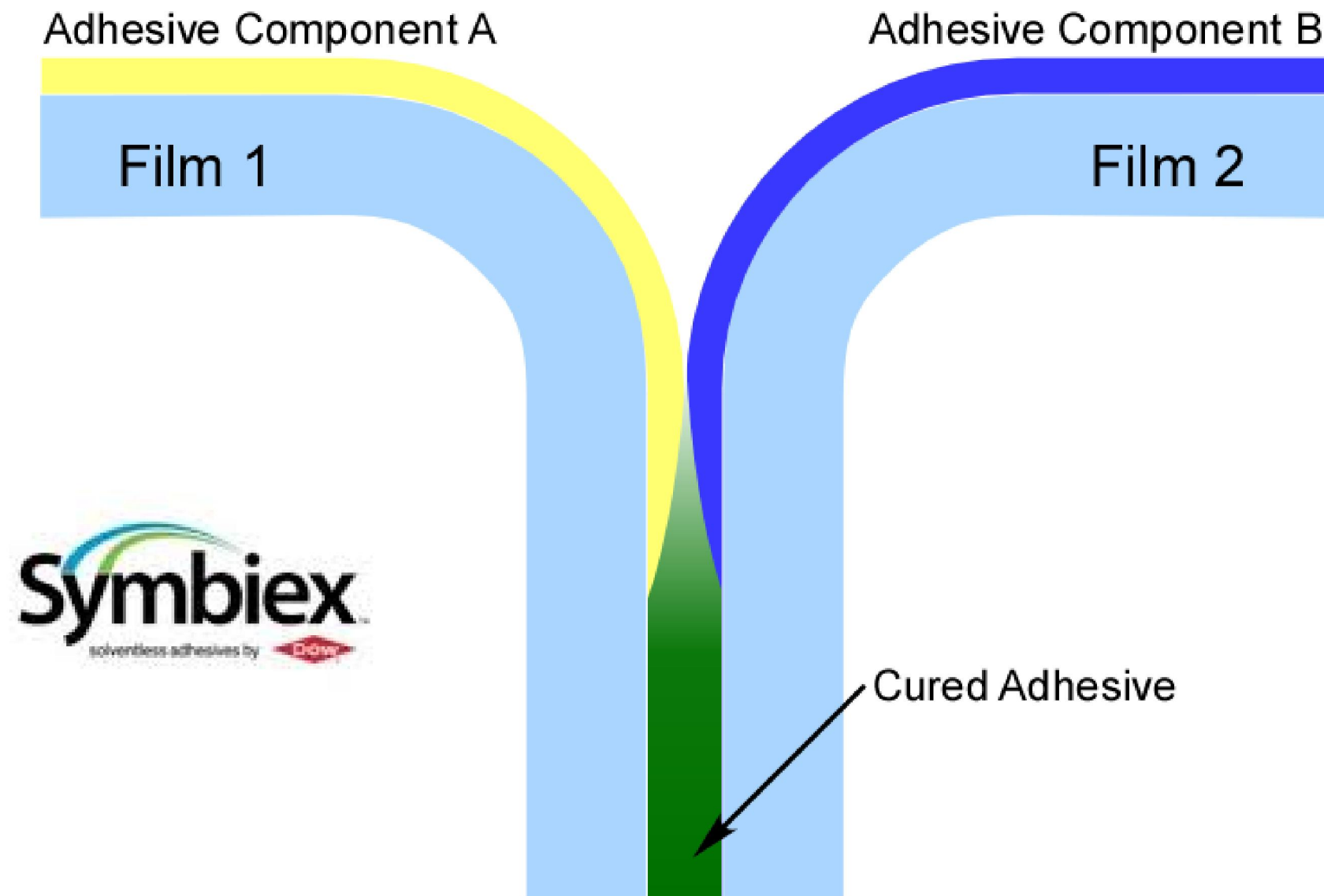
---



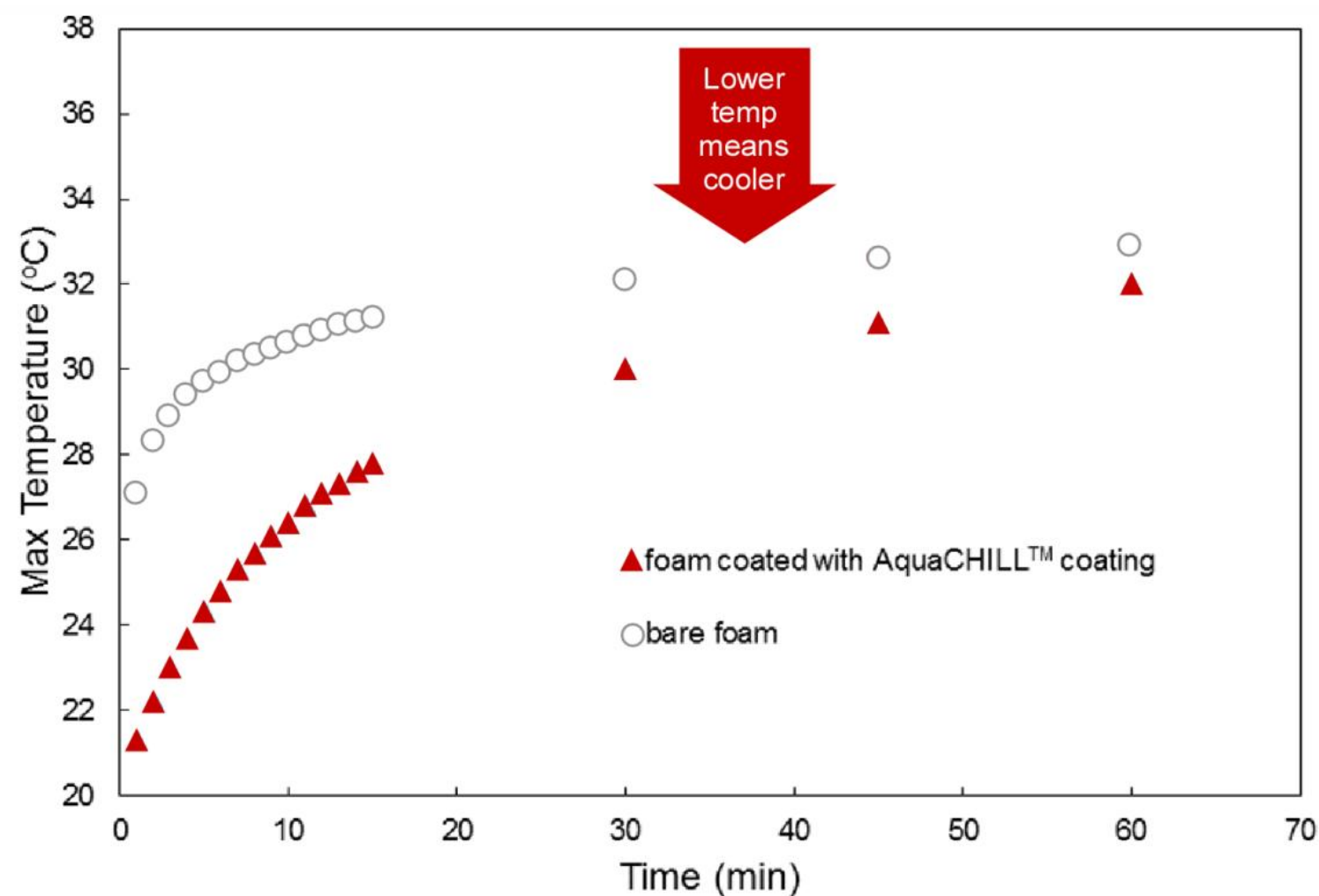
*Bad:* The building.

*Good:* The specialized production facility showing the cryogenic storage tanks necessary to ensure consistent high quality.

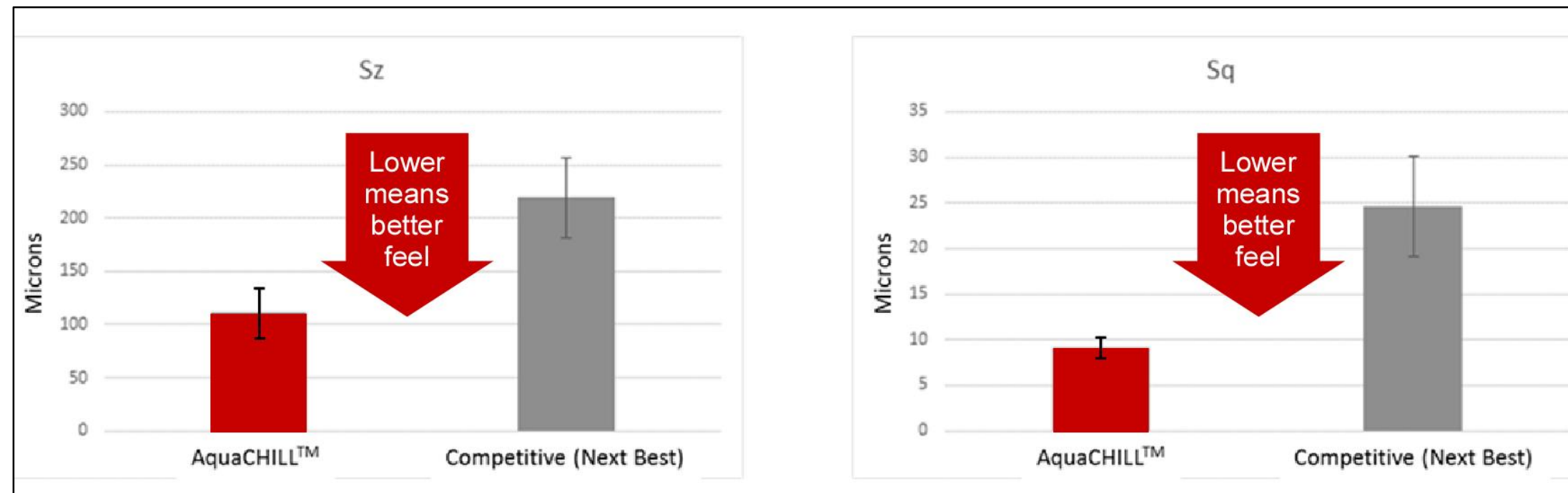




Symbiex™ is a two-part, reactive adhesive. Individually coated films are unreactive until combined. The individual components are solvent-free and the reaction produces no volatiles. Lack of volatiles mean that multilayer films can be processed after a short curing time and does not require warehousing for off-gassing.



Impact of AquaCHILL™ coating on maximum mattress temperature. AquaCHILL™ coating can effectively keep the foam cool for extended period of time by dissipating heat via phase change. As shown in the figure, the maximum temperature in the uncoated mattress increases rapidly and exceeds 30°C in less than 15 minutes. However, the maximum temperature in the AquaCHILL™ coated mattress remains at a relatively low level and is below 28°C after 15 minutes.



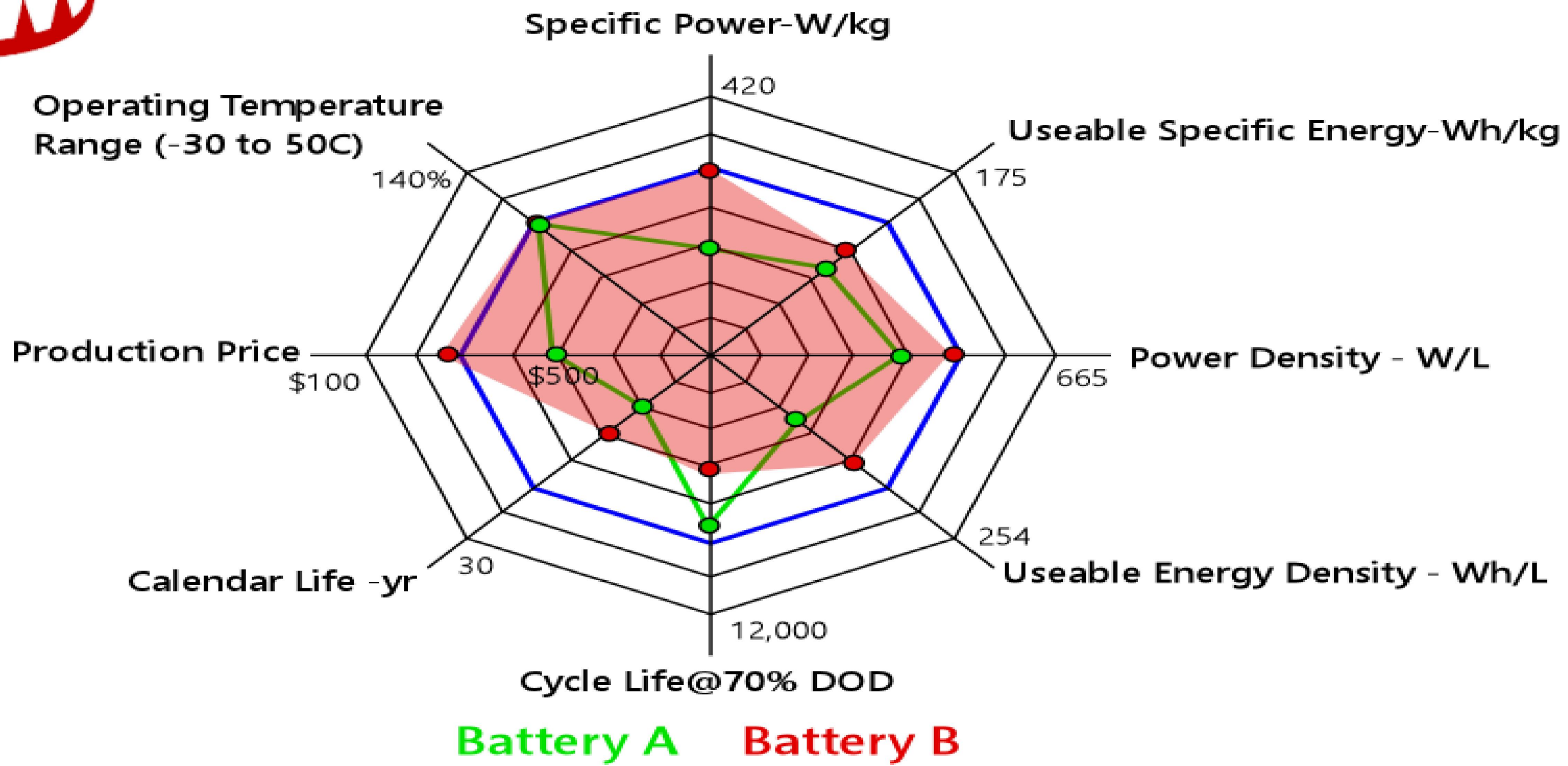
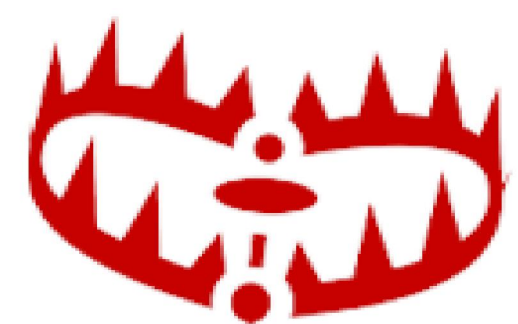
Maximum peak to valley (Sz) and root mean squared roughness (Sq) of the AquaCHILL™ and the competitive coating as measured via laser scanning confocal microscopy. End consumers of the bedding products, prefer a smooth surface texture. It is clear that the lower RMS roughness and peak to valley numbers indicate that the AquaCHILL™ is significantly smoother than the competitive coating.

# Tactics: The Right Tools

---



- *don't let tools get in the way*



**TIPS**

graphs used to gain understanding  
are unlikely to be good for explaining

**R&D 100**  
CONFERENCE

DECEMBER 4-5, 2019

SAN MATEO, CA



## Tactic: Video

---

Video can be very effective.

Look to provide information difficult to provide in text or pictures.

Does not have to be highly produced.

*Keep them short and provide descriptions.*

*Don't be repetitive.*

## Flame Testing Polyurethane Foam



**with VORAGUARD™**



# Communications Hierarchy

---

Tools  
Tactics  
Strategy  
Audience  
Goal



---

**R&D 100**  
**CONFERENCE**

DECEMBER 4-5, 2019

SAN MATEO, CA

