

A GC3 Startup Network Webinar

Nouryon's Startup Challenge
Imagine Chemistry:
Advancing Sustainability Through
Collaborative Innovation

Tuesday, December 11, 2018



What is the GC3?

The Green Chemistry & Commerce Council (GC3) is a multi-stakeholder collaborative that drives the commercial adoption of green chemistry by catalyzing and guiding action across all industries, sectors and supply chains.



Our Vision and Mission

Vision: A world where green chemistry is standard practice throughout the value chain.

Mission: To drive the commercial adoption of green chemistry by catalyzing and guiding action across all industries, sectors and supply chains.



More than 130 Members Across Sectors and the Value Chain

amazon.com[®] EASTMAN Steelcase Johnson & Johnson Walmart*

LOWE'S SHERWIN WILLIAMS. DOW ESTÉE LAUDER COMPANIES Apple THE HOME DEPOT hp

Chemours L'ORÉAL TARGET Kingfisher CVS Health

STAPLES vf BEHR 3M Unilever BEST BUY

LEVI STRAUSS & CO. Johnson A FAMILY COMPANY Beiersdorf BEAUTYCOUNTER

Nike BASF The Chemical Company seventh generation. NB covestro COLGATE-PALMOLIVE

GC3

GC3 Startup Network

Creating an innovation ecosystem for green chemistry technologies

Goals

- Support green chemistry start-ups
- Introduce large strategics to new chemical technologies, partnership and investment opportunities

Main Activities:

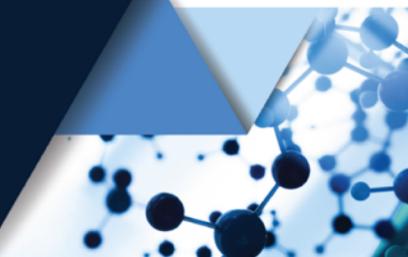
- Technology Showcases
- Strategic Connections Program
- Webinars
- **Coming:** Expansion into South America and further expansion into Canada

Members of the GC3 Startup Network Include:



GC3 Startup Network Technology Showcases

Second Annual
**Green & Bio-Based Chemistry
Technology Showcase &
Networking Event**



April 24, 2017
Amway Grand Plaza Hotel
Grand Rapids, MI

**GC3 GREEN CHEMISTRY &
COMMERCE COUNCIL**

**Green & Bio-based
Chemistry
Start-up Event**

May 23, 2016
Hilton Burlington Hotel
Burlington, VT

GC3
GREEN CHEMISTRY &
COMMERCE COUNCIL
Business Mainstreaming Green Chemistry

**THIRD ANNUAL
Green & Bio-Based Chemistry Technology
Showcase & Networking Event**

Tuesday, May 8, 2018
MeadowView Conference Resort & Convention Center, Kingsport, TN

In support of our efforts to mainstream green chemistry, the GC3 Green & Bio-Based Chemistry Startup Network is designed to foster the growth of green and bio-based chemistry startups and accelerate the market adoption of innovative green chemistry technologies. The goals of our third annual GC3 Green & Bio-Based Chemistry Technology Showcase & Networking Event are to:

1. Connect green and bio-based startups to suppliers, brands, retailers, and investors who can provide insight on their technology needs and interests, provide directional advice, and explore potential partnerships and investments for testing, development, and scale;
2. Provide an opportunity for suppliers, brands, and retailers to discover new ingredients and materials for their products, build relationships with innovative startups, and find new partnership and investment opportunities;
3. Discuss strategic needs, interests, and directions of various industry sectors to help inform startups' R&D and applications priorities.

INVITED SPEAKERS — LARGE PRODUCT MANUFACTURERS

BASF Patrick Harmon, Research Chemist
L'Oréal USA Jeanne Chang, Assistant Vice President
Petagonia Inc. Laura Hoch, Materials Innovation Engineer

PRESENTING STARTUPS

ACTICELL GmbH
Jaergen Jolly, Partner
www.acticell.at | j@acticell.at
ACTICELL develops chemical technologies for the surface treatment of cellulosic materials including denim fabrics and clothes. ACTICELL's non-toxic and environmentally friendly products can be used as dyeing enhancers or as bleaching agents to replace hazardous technologies.

ADVONEX INTERNATIONAL
Michael Tkautz, Business Development Manager
www.advonexintl.com | mtkautz@advonexintl.com
Advonex International produces renewable hydrocarbons from biologically-derived plant oils, fats and greases through a patented electrochemical process. Advonex products provide the personal care, automotive and coating industries with a bio-based substitute to petroleum-derived ingredients including high-performance base oil, white oil, wax, gels, and alpha olefins.

**GC3 GREEN CHEMISTRY &
COMMERCE COUNCIL**

10 | Innovators Roundtable | May 8-10, 2018

<http://greenchemistryandcommerce.org/startup-network/>



4th Annual GC3 Technology Showcase



Calling all innovators developing green chemicals, materials, products or manufacturing technologies!

Application will open shortly. Deadline Feb. 1, 2019

<http://greenchemistryandcommerce.org/startup-network/>





Imagine Chemistry Collaborative Innovation Webinar

3rd edition 2019

December 2018

Nouryon

Introduction Nouryon

Formerly known as AkzoNobel Specialty Chemicals

A global specialty chemicals leader

- Produce essential chemicals
- Experts in highly demanding chemistry
- World-class business with strong financial performance, leadership positions, and long-term customer partnerships
- Top-tier performance in safety, sustainability, and reliability
- Leveraging nearly 400 years of experience, our global presence, and our strong company culture to unleash our full potential as an independent company

About **10,000**
employees
worldwide

Operating in over
80 countries

€5.0 billion
revenue in 2017

80% of our
revenue comes
from #1 or #2
positions

Supplying essential chemistry to markets worldwide

- Experts in highly demanding chemistry
- Supplying markets with essential chemicals for manufacturing everyday products
- Our products play an essential role in everyday life



Growth driven by innovation

- A portfolio rich with innovative products
- Investing in RD&I to drive growth, create safer and more sustainable products and processes, and improve the way we work
- Opening up to the ideas and enthusiasm of outsiders to achieve our full potential and help build a more sustainable industry
- Working closely with customers and partners to develop sustainable solutions

700
employees
in RD&I

€100 million
per year
invested
in RD&I

Imagine Chemistry
challenge
generated
over 350 ideas

More than
5,000
patents

Imagine Chemistry Collaborative Innovation Challenge

The slide features a solid orange background. Three white, curved lines of varying radii sweep across the page. A small blue dot is positioned on the leftmost curve, and a small green dot is on the rightmost curve. The text is centered in the upper-left quadrant.

Imagine Chemistry

Solving real business challenges and make a better world with chemistry

Collaborate as *equals*, by being *transparent, listening and learning* from each other

Startup solutions

- Fresh ideas
- New perspectives
- Passion and energy



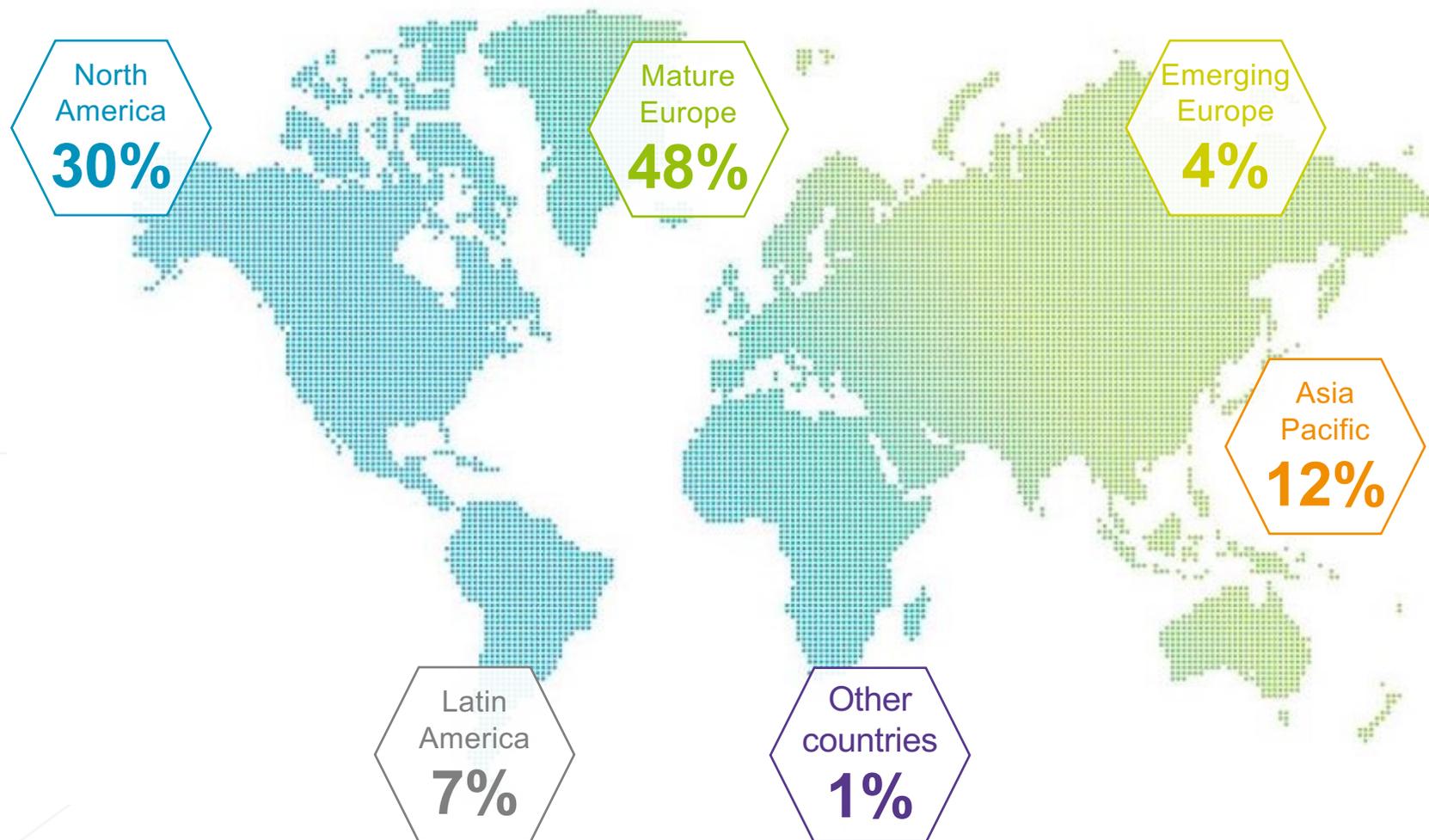
Nouryon global capabilities

- Bring ideas from lab to production
- Safety and operational excellence
- Global footprint

“We seek to get infected by start-up passion; in exchange offering our experience, capabilities and route-to-market”

Two Editions of Imagine Chemistry

350 submissions with a truly global spread



A unique approach

Intensive collaboration for route to market

Unique approach

From 1 year to 3 days.
By bringing together
all decision makers &
decide on the spot

Business impact

Focused on real-life
business challenges.
Solutions can be
brought to market

Collaborative approach

Not a beauty contest
but joint development.
No IP claims in
advance and shared
IP

One-stop shop & deep screening

Cover all aspects of
business plan in 1
event: 70+ experts,
decision makers and
partners

Thorough technology and business assessment

73 experts, 8 fields of expertise, 141 sessions during the finals



Imagine Chemistry 2018

2018 finals Gothenburg

- 20 Mentors
- 40 Finalists
- 70 Experts
- 140 Individual sessions

And many, many others
...a lot of networking

And now the real work starts...
...form dedicated teams and bring solutions to market

2018 awards

Based on 7 criteria, including the value case

The AkzoNobel Chemicals
Startup Challenge

Partner
awards

Joint
Development
Agreements

AkzoNobel
Chemical
support

Research
Agreement

Sourcing
Agreements
Launching
Customer

Green Island Technologies
& Dixie Chemicals

Water Knight

Fero Inds

Solugen

We continued collaboration with 20 Finalists



Solugen (US) – Gaurab Chakrabarti and Sean Hunt

Solugen is a venture-backed green chemicals company that uses enzymatic processes to create bio-based oxidants. Their proposed project to conduct with Nouryon is the enzymatic production of hydrogen peroxide.



Fero Labs (US) – Berk Birand and Alp Kucukelbir

Fero is an industrial machine learning software that is powering the next wave of industrial process improvement.



Invert Robotics (The Netherlands) – James Robertson, Robert Mandjes and Hans Prein

Invert Robotics provides non-destructive inspection services using state-of-the-art mobile climbing robots. Their robots enable precise and accurate remote inspections of surfaces which are difficult or dangerous for humans to access. In so doing, they are helping make inspections safer.

20 Finalist and 10 different awards presented

Imagine Chemistry 2019

Strong external partners

Outreach, content and win-win

Nouryon



luxresearch



Innovate UK
Knowledge Transfer Network



Imagine **Chemistry**

2019 Imagine Chemistry Challenges

Sustainable bio-based surfactants for everyone

How can we together make 100% bio-based and zero-hazard surfactants accessible worldwide?



Sensing in demanding chemical environments

Will your innovative sensing solution help our demanding chemical processes approach 100% resource efficiency?

From plastic waste to valuable feedstock positions

Do you have a solution to help us upcycle polyolefins?

2019 Imagine Chemistry Challenges

Performance-boosting nano particles

Do you have a small particle solution to enhance the performance of our customers' products?

Open idea challenge: Pushing the frontiers of sustainable innovation

Do you have an innovative idea on how to build a sustainable future together?

Label-free chemistries

How can your novel label-free chemistry simultaneously control interface and fluid properties for our consumers/customers?

Who can submit a solution?

Proof-of-principle to full product



Startups

You have a proven concept which could be a solution for one of our business challenges.



Scaleup

You have successfully launched your product and are ready to explore new applications and markets



Suppliers

You have a solution working in a different market that matches one of our business challenges



Universities

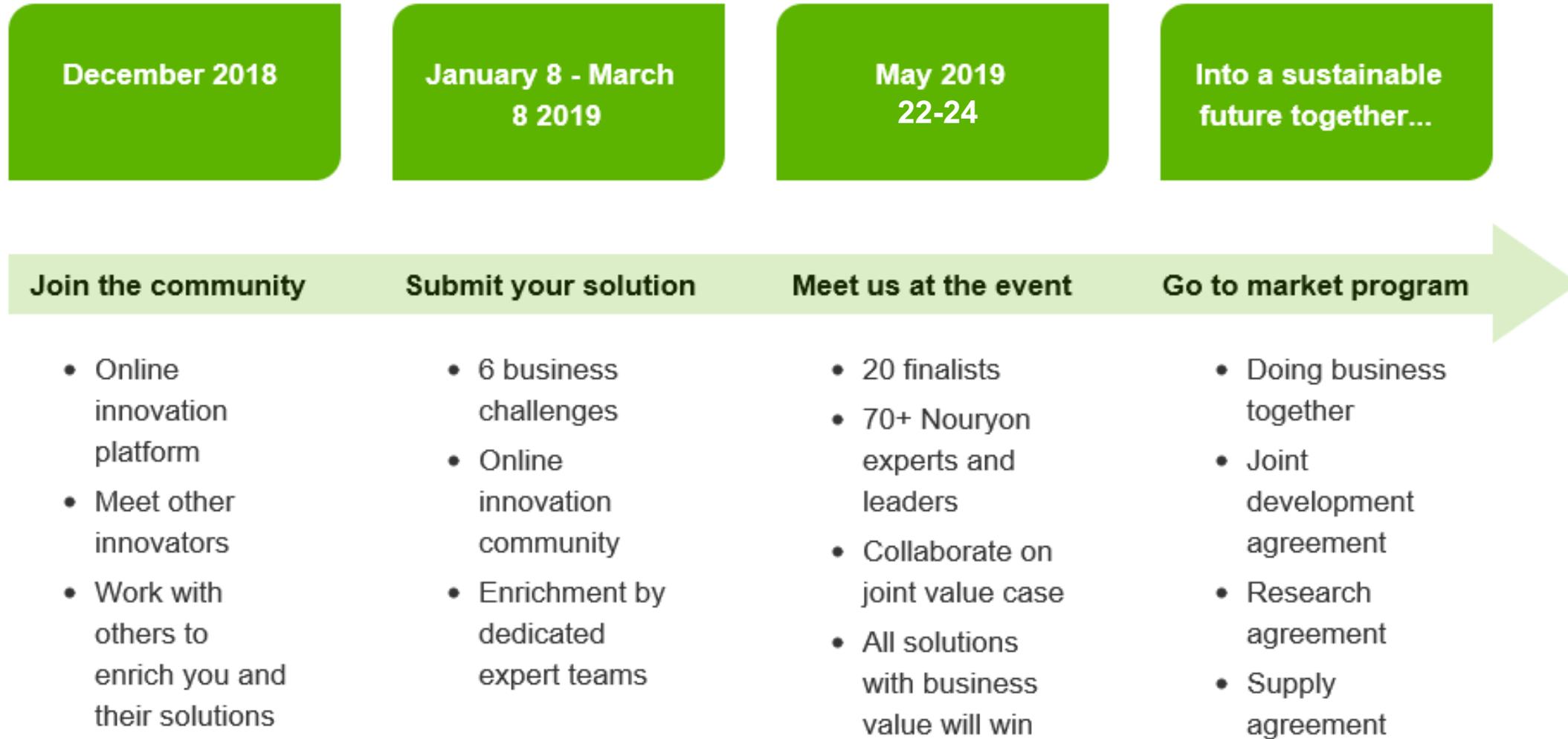
You work at a university and you have a proven concept that is ready for valorization.



Research Center

You work at a research institute and you have a proven concept that is ready for valorization.

How it works





Join us



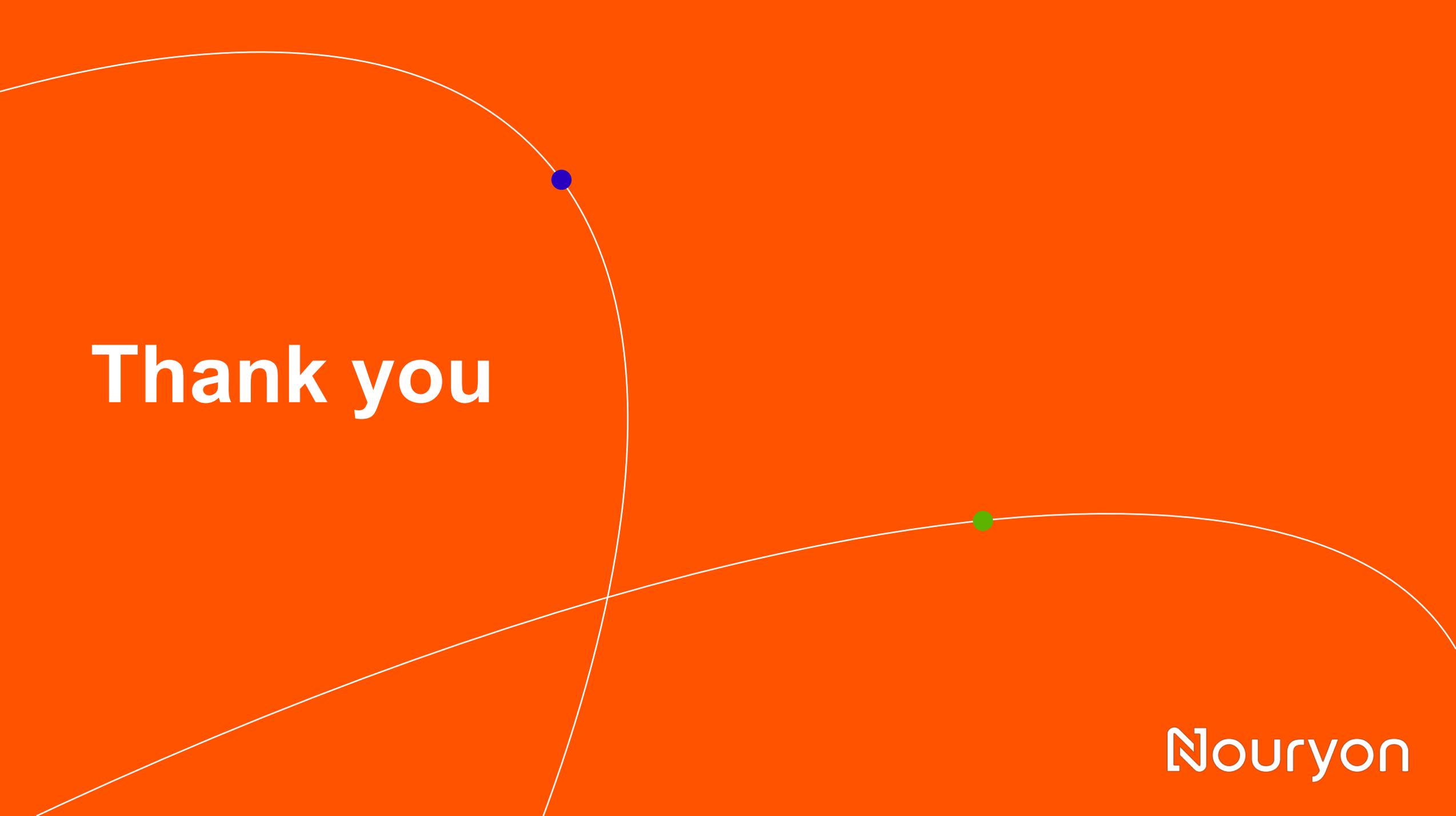
imaginechemistry.com



[@ImagineChem](https://twitter.com/ImagineChem)



imaginechemistry@nouryon.com

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Thank you

Nouryon



Upcoming Webinars

ChemSec Marketplace: An exchange platform for green chemistry alternatives

Tuesday, January 22, 2019

12:00 – 1:00 PM EST

Championing Your Ideas with Coordinated IP Strategies

Tuesday, February 26, 2019

12:00 PM - 1:00 PM EST



GC3 INNOVATORS ROUNDTABLE

MAY 7-9, 2019 | HOSTED BY P&G FABRIC CARE, CINCINNATI, OHIO



**14th Annual
GC3 Innovators Roundtable**
May 7-9, 2019

Check website for updates

www.greenchemistryandcommerce.org



Thank you for joining us!

For more information about the GC3, please visit
www.greenchemistryandcommerce.org

