Why this experiment?
Make the next one count

DESIGN OF EXPERIMENTS

You cannot test every formulation. Uncountable uses your past experiments and property targets to suggest what to test next, and shows why.

SET THE SPACE

Define the ingredients, allowed ranges and property targets for the round.

PREDICT

The model estimates each output and its confidence from the experiments you have.

SUGGEST

Each round balances exploration with regions that look promising.

IN THE PLATFORM **Every suggestion shows its constraints, targets and regime**

Suggested Formulations — Design

Step Name		Recipe Name		#1	#2	#3
		Import Recipe?		✓	✓	✓
	Sampling Regime			Exploitation	Exploration	Exploration
	Category	Ingredient	Constraint			
Step 1	Chemical	Bromobenzene	[3, 5]	4	3	3.03
	Additive	Chimassorb 944 UV Stabilizer	[1, 4]	3.23	3.02	3.89
		Flame Retardant 1	[2, 6]	2.1	3.69	5.04
		Plasticizer 1	[5, 6]	5.61	5.34	5.3
	Polymer	New Polymer B	0 or [1, 10]	9.51	4.54	3.13
		New Polymer C	0 or [1, 10]	2.97	3.09	4.64
	Calculations	<Experiment Total>		27.4	22.7	25
Output			Goal			
Flexural Strength (MPa)			range: min **37** max **95**	66.6	66.5	65.7
Elongation at Break (%)			range: min **22** max **45.1**	33.7	37.4	31
Tensile Modulus (MPa)			range: min **4** max **9.5**	6.88	7.2	6.52
Tensile Stress at Break (MPa)			range: min **10.1** max **38.6**	24.3	23.6	24.4

Suggested formulations with constraints, target ranges and exploration or exploitation labels (demo data).

"Uncountable identified novel compounds that were outside of our normal box of experimenting."

Chris Couch, Chief Technology Officer, Cooper Standard

2.5x
reduction in testing time and in experimental trials
Cooper Standard

THE UNCOUNTABLE PLATFORM

Research & Development · Quality · Product Lifecycle · Regulatory Management · Project Portfolio Management

Uncountable's AI-native end-to-end platform is deployed by 175+ product development teams.

DuPont · SunChemical a member of the DIC group · Sika · Clariant · Mondelēz International · Beiersdorf

WHY IT MATTERS

If the team can't explain it, they won't run it

A new target lands: more flexural strength without losing elongation. You cannot test every formulation, so the team spreads a grid across the design space or reruns last year's best recipe. A suggestion that hides its constraints, targets and model sends scientists back to what they already know.

HOW IT WORKS

One guided flow

Design setup, training set, performance targets, design space, predictive model and submitted design.

Start with constraints

Every candidate respects the allowed formulation and process limits you set.

Train on what you have

The training set comes from your existing experiments, so the first round builds on past work.

Predict each property

The model estimates each output and its confidence. A Gaussian Process is available as the predictive model.

Balance the round

Exploration tests areas where the model needs information. Exploitation tests regions that look promising.

Read the effects

Effect Sizes rank feature weights for each output, linking a suggestion to the factors behind it.

Check against measurements

On the predicted-versus-actual plot, points near the diagonal show closer agreement.

Rerun when evidence changes

Tighten the constraints or exclude an outlier from the training data, then run the DOE again.

Bodie AI Agent

Bodie can analyze DOE results and recommend next experiments with model quality, effects and constraints.

Example: one round of suggestions

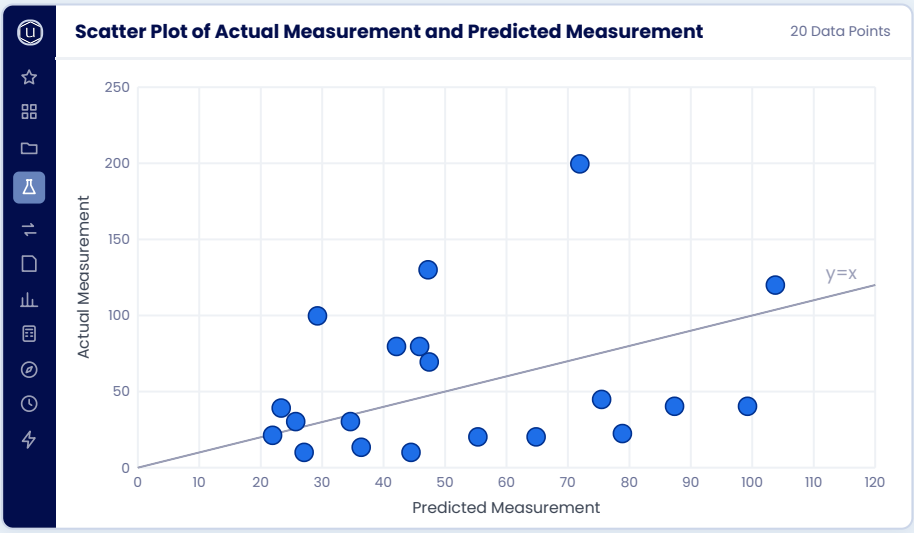
A polymer compounding team sets four mechanical targets and asks for three formulations.

RESULT

Three suggested formulations, each predicted inside all four target ranges: one exploitation, two exploration.

NEXT STEP

Run all three, add the measured results, and check predicted against actual before the next round.



Predicted versus actual measurements for a trained model (demo data).

See it on your own process

Bring one development question and the experiments you already have. We'll walk through the first round of suggestions with you.

SCAN TO BOOK

Book a demo →