

# Knovel for Oil and Gas

For the Oil & Gas Industry, staying competitive in a challenging economic environment means meeting global demand for natural resources while remaining vigilant of price volatility, and decreasing or uncertain margins.

**Knovel** delivers trusted, accessible and relevant engineering answers and insights to address challenges, bottlenecks and inefficiencies in the Oil & Gas Industry, ensuring business continuity through operational excellence.



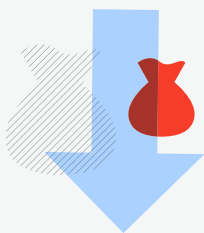
“Past knowledge gained from [Knovel] helped spot potential for increasing production through choke optimization. Execution of the approved plan yielded 100% oil production from the well.”

—Production Manager at Integrated Oil Company

## Minimize risk while maximizing output and efficiency

Fluctuations in oil prices, harsh environments, HSE concerns, infrastructure demands, unplanned outages, production downtime. These business challenges in a volatile industry constantly put pressures on engineering teams in oil and gas companies.

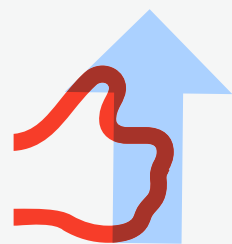
All the while, oil and gas company leaders must:



Reduce risks along the value chain



Adhere to environmental, health and safety regulations



Maximize efficiency and quality of production

## A solution that supports decisions

**Knovel** is an engineering-decision support solution that helps oil and gas companies minimize drilling time, maintain safe business practices and be more efficient in downstream operations.

Simply put, Knovel helps oil and gas companies make better decisions in upstream and downstream applications.

Knovel is a critical solution to help with:

### Reducing Engineering Risks

# \$250<sub>K</sub>

Knovel helped an unconventional oil and gas company reduce corrosion risk in its shale gas well equipment by replacing certain fluids going through its systems, **saving \$250k per year in process chemical and nitrogen costs.**

### Managing HSE Risks

# \$400<sub>K</sub>

Knovel helped a large oil and gas company meet new environmental regulations by helping them find the right adsorption agent that would limit benzene emissions, **saving \$400k in plant modification costs.**

### Production Excellence

# 2X

Knovel helped an oil and gas company find a suitable replacement for a pump used in oil extracting, **doubling the throughput of crude oil at the facility.**

## Engineers use Knovel to:



Research substance and material properties and suitability for applications and process improvements



Perform calculations to solve process and application challenges



Troubleshoot issues and failures



Develop design guidelines and criteria for equipment, maintenance and processes



Assess safety and risks with potential and existing processes and systems



Get up to speed on unfamiliar topics



### Reduce engineering risk

“Used some publications to better assess existing facilities against seismic risk and minimize mitigation works.”

—Mechanical Engineer

### Cut design & development costs

“I used [Knovel] to properly size and calculate all parameters of measuring equipment and valves, which decreased cost of my project and was a good method to validate vendor calculations.”

—Instrumentation & Control Engineer

## Knovel supports Upstream Oil and Gas with essential, data-rich answers

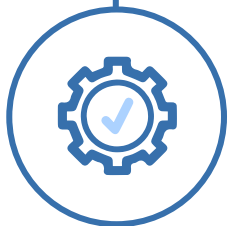
Knovel helps upstream oil and gas companies reign in costs and use operational resources efficiently, ensure HSE requirements are met, and mitigate preventable downtime risks. With Knovel, engineers make better decisions, resulting in gains such as:



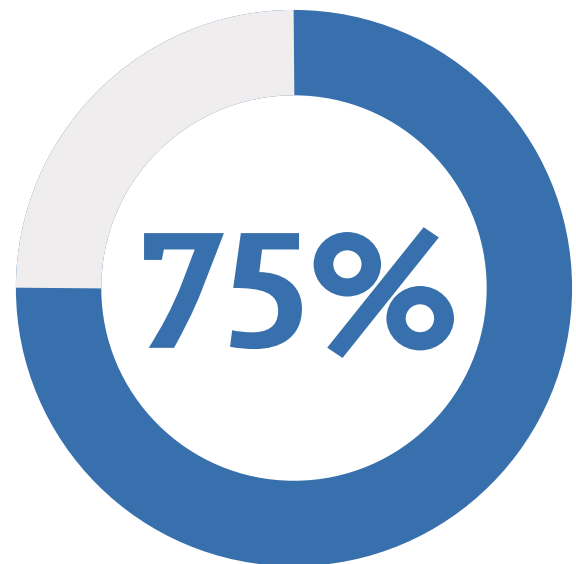
Reduced consultant fees



Informed well construction and maintenance



Streamlined process control & automation



...Of upstream oil and gas users say **Knovel** helps them reduce engineering risk.

Source: 2017 Knovel User Survey



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### Build new knowledge

“Currently I am doing research about enhanced oil recovery and Knovel has been a great source of knowledge.”

—Production Engineer

### Tackle problems fully informed

“I use Knovel references in my engineering and design work. These include process, process control and safety works.”

—Service Engineer

## Knovel empowers Downstream Oil and Gas with operational insights

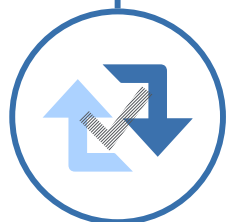
Knovel helps downstream oil and gas companies improve and upgrade operational equipment, develop HSE-compliant methods, and identify the best technologies to optimize processes. With Knovel, engineers make better decisions, resulting in gains such as:



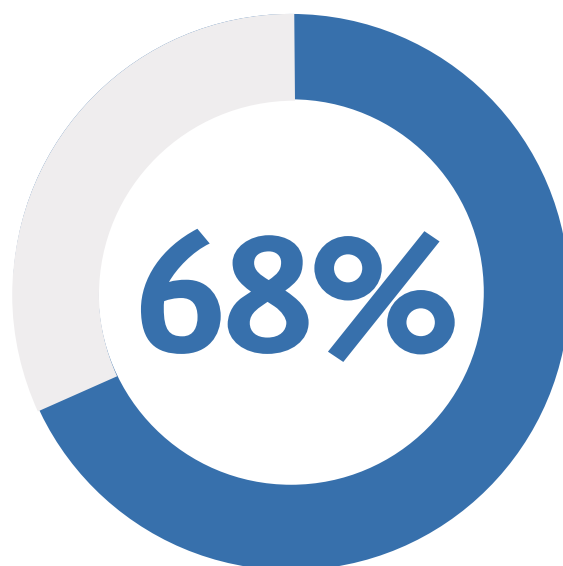
Problem-solving based on industry data & insights



Assessment & management of HSE issues



Continuous process improvement



...Of downstream oil and gas users say **Knovel** helps them increase plant efficiency.

Source: 2017 Knovel User Survey

# How Knovel delivers

## Essential answers: relevant, tailored content throughout the search journey

- Technical reference resources from 150+ publishers including the Crude Oil Assay database, NACE and more
- Interactive content including equations, graphs and tables
- 65M+ data points including material and chemical property data

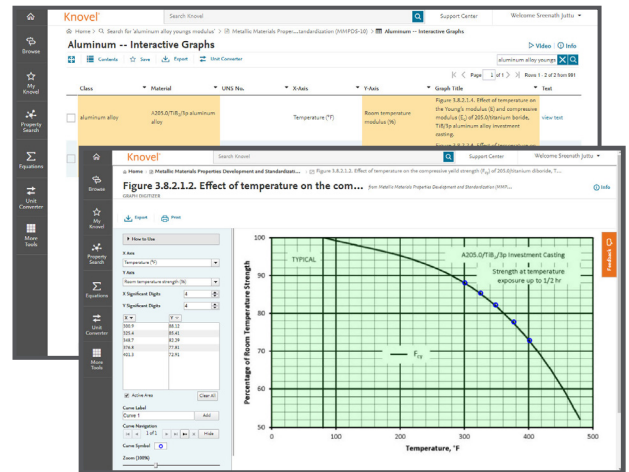
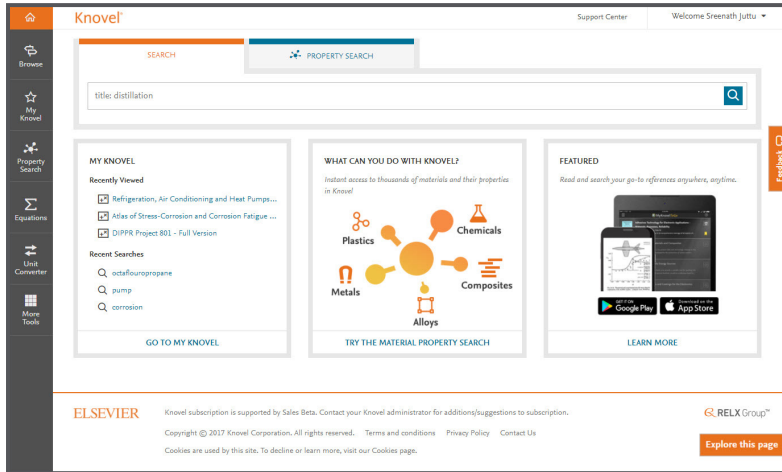


Figure 1: User-defined searches or viewed content, as well as tools like interactive graphs and a unit converter, are just a click away.

## Accelerated discoveries: powerful search and processing capabilities

- Text-based search eliminates the need to know complex taxonomies to find relevant results
- Property data search easily narrows down properties for specific conditions
- “Refine by” tool extracts engineering concepts to declutter results and discover connected content

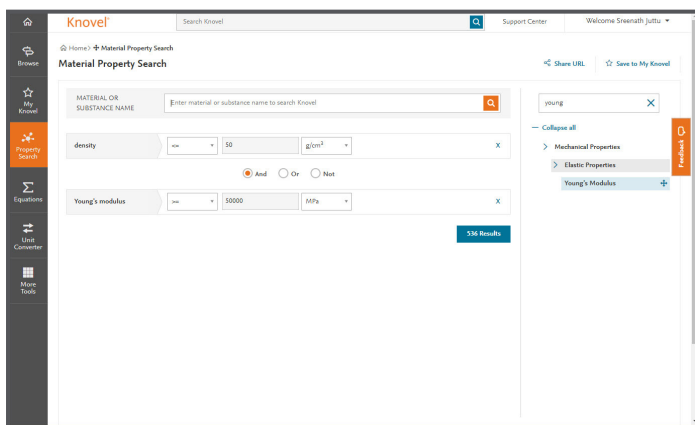


Figure 2: The powerful but intuitive query builder of Knovel's Property Search.

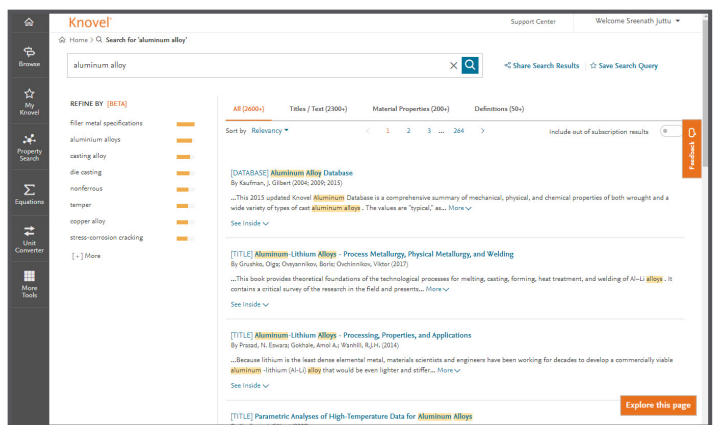


Figure 3: The unique “Refine by” tool highlights engineering concepts to quickly get relevant answers.

## How Knovel delivers

### Continuous access: using Knovel content when and where answers are needed

Knovel is designed for using information. Thus, plug-ins enable content interoperability with essential engineering tools and software like Autodesk Inventor and Excel. Furthermore, Knovel ToGo grants mobile access to results, extending the reach of insights beyond the office and eliminating project delays.

- Access to answers & insights on the go with the Knovel ToGo app
- Integrations with third party software like Autodesk Inventor and Microsoft Excel

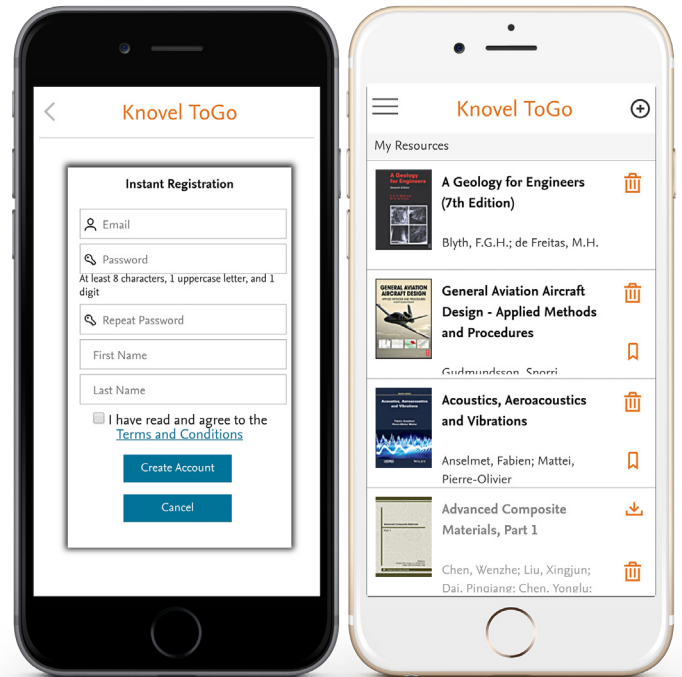


Figure 4: The Knovel ToGo app for Tablets & Smartphones is available on iOS (App Store) and Android (Play Store)

Users agree: Knovel advances their engineering work, providing answers and insights with high business impact

## Knovel



Source: 2017 Knovel User Survey

## Knovel

Knovel is an engineering decision-support solution enabling engineers to solve problems faster. With powerful search and interactive analytical tools, engineers can confidently find answers to technical questions through best practice insights, validated equations and materials and substances data from more than 150+ providers. For more than 15 years, Knovel has helped thousands of engineers and researchers from leading companies and institutions around the world enhance research and productivity, achieve operational excellence, reduce costs and time to market, and build expertise.

For more information about Knovel,  
visit [www.elsevier.com/knovel](http://www.elsevier.com/knovel)

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