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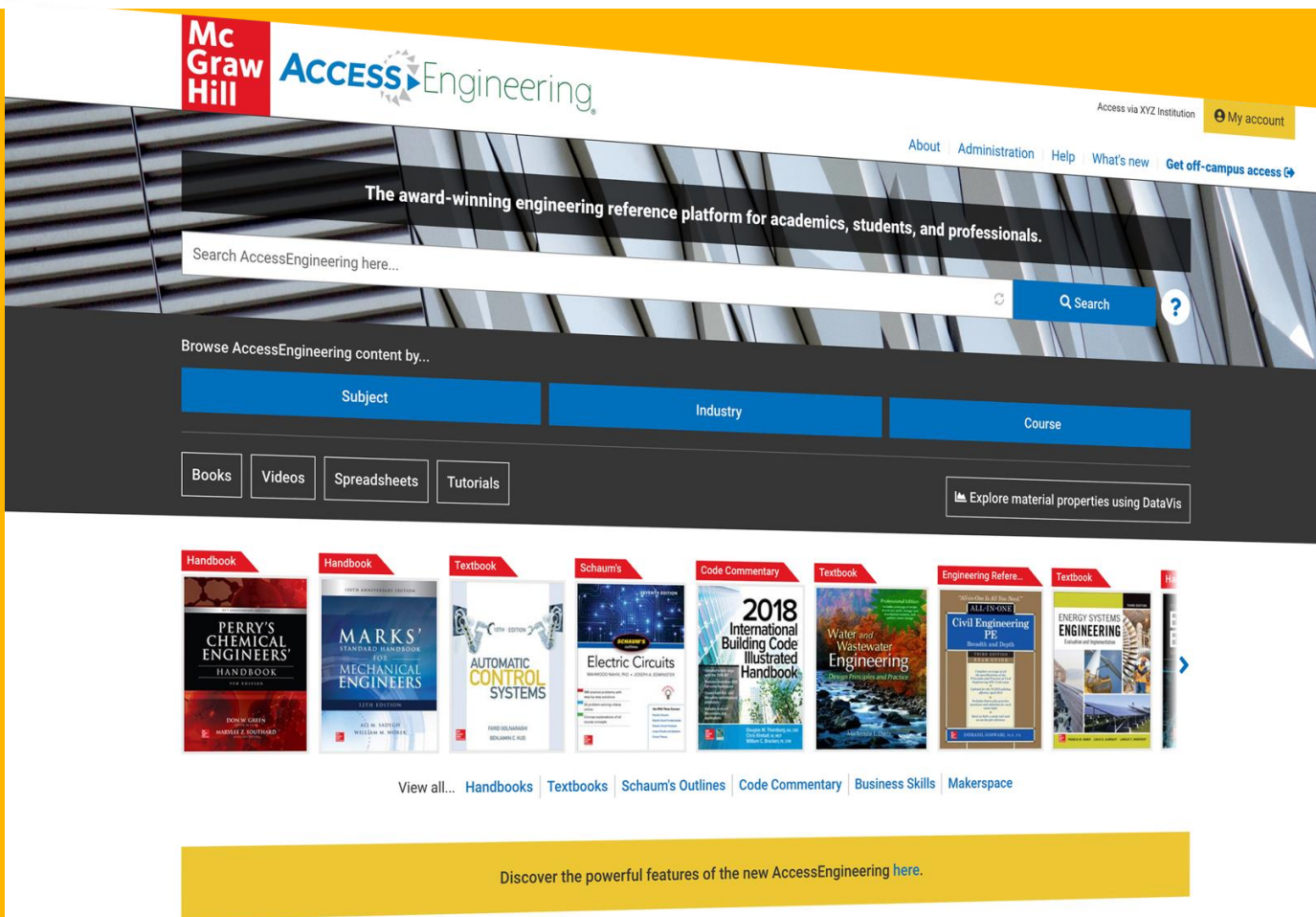




AccessEngineering is an award-winning engineering reference and teaching platform that delivers world-renowned, interdisciplinary engineering content integrated with analytical teaching and learning tools.

AccessEngineering prepares students to solve real-world problems, makes curriculum planning and delivery easy for faculty, and helps professionals find relevant information faster, driving increased ROI.

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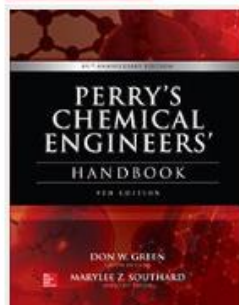
Spreadsheets

Tutorials

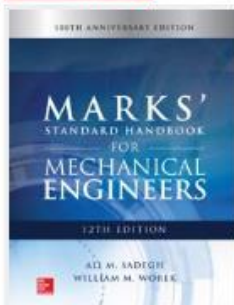
Browse by subject, industry, or course

Explore material properties using DataVis

Handbook



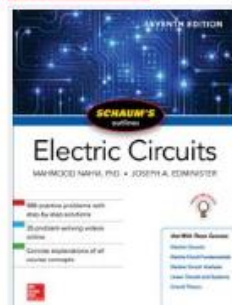
Handbook



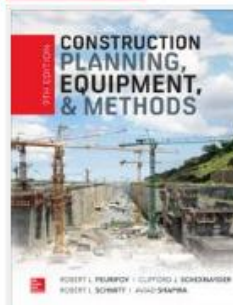
Textbook



Schaum's



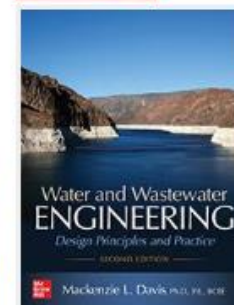
Textbook



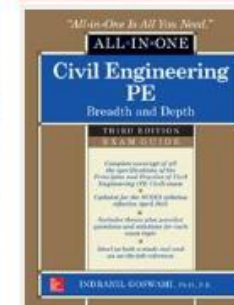
Code Commentary



Textbook



Engineering Reference



Textbook



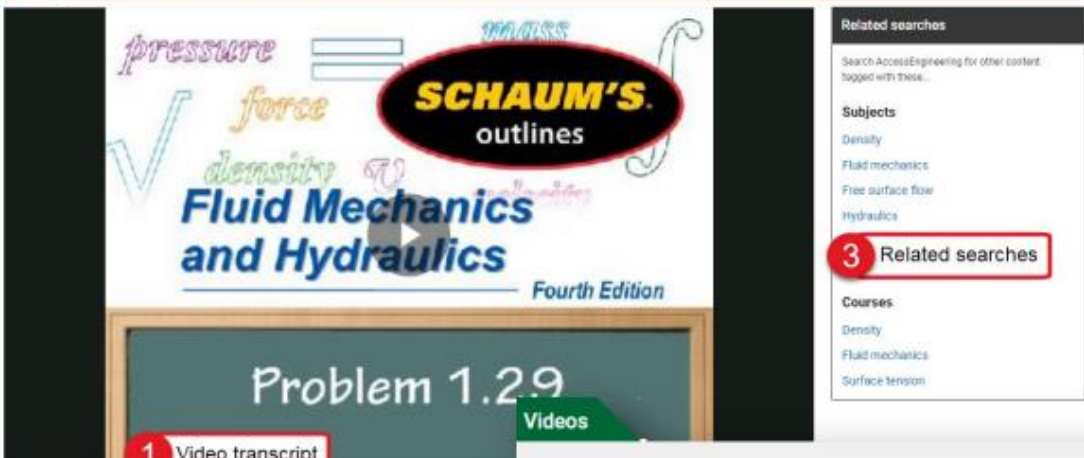
Schaum's Fluid Mechanics and Hydraulics Problem 1-29: Surface Tension

Thom Adams, Ph.D., Professor, Mechanical Engineering, Rose-Hulman Institute of Technology

This video demonstrates how to calculate the lift force needed to overcome surface tension acting on a thin ring.

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**Video**



**1** Video transcript

**2** Link to context

**3** Related searches

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- Hydraulics

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# Content: Spreadsheets

Spreadsheets

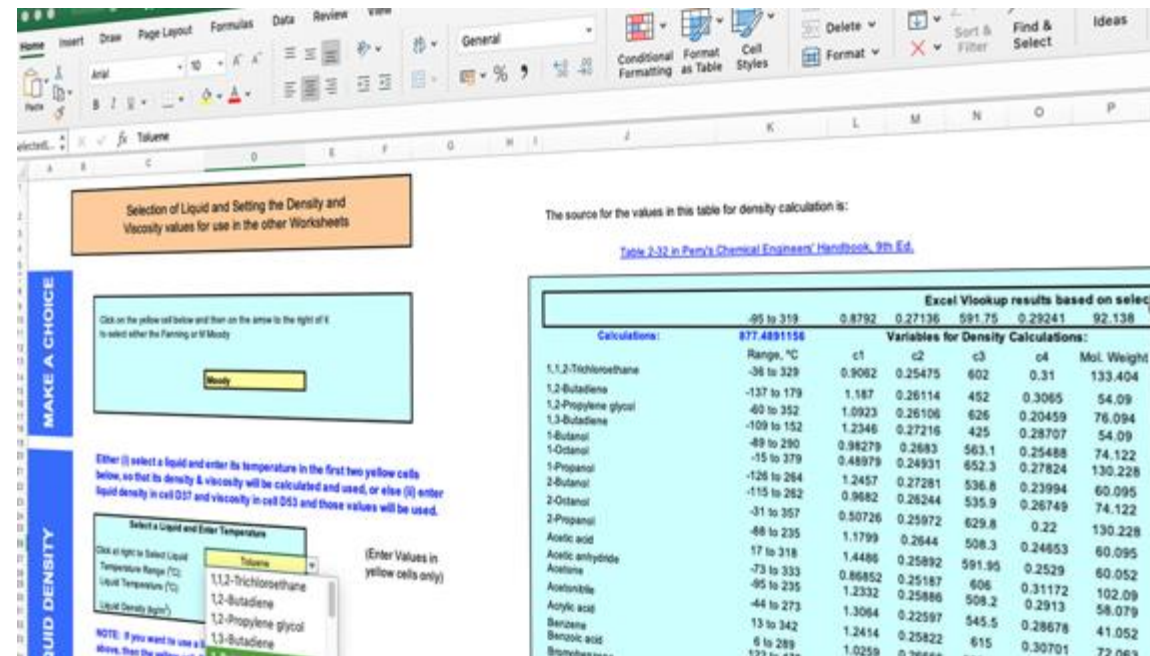


Save time and ensure accuracy by using our calculator tools to solve frequently used engineering equations.

These Excel templates embed data and formulas to streamline complex calculations.

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**AccessEngineering's** Excel spreadsheet calculators contain embedded data and formulas to streamline complex calculations. Spreadsheet calculators have their own landing page and taxonomy terms. A list of available spreadsheets can be found in the interactive tools section of the homepage.



The source for the values in this table for density calculation is:

Table 2-32 in Perry's Chemical Engineers' Handbook, 9th Ed.

Excel Vlookup results based on select						
	-95 to 319	0.8792	0.27136	591.75	0.29241	92.138
Calculations:	877.4891156					
Variables for Density Calculations:						
1,1,2-Trichloroethane	Range, °C	c1	c2	c3	c4	Mol. Weight
1,2-Butadiene	-36 to 329	0.9062	0.25475	602	0.31	133.404
1,2-Propylene glycol	-137 to 179	1.167	0.26114	452	0.3065	54.09
1,3-Butadiene	-60 to 352	1.0923	0.26106	626	0.20459	76.094
1-Butanol	-109 to 152	1.2346	0.27216	425	0.28707	54.09
1-Octanol	-89 to 290	0.88279	0.2683	563.1	0.25488	74.122
1-Propanol	-15 to 379	0.88979	0.24931	652.3	0.27824	130.228
2-Butanol	-126 to 264	1.2457	0.27281	536.8	0.23994	60.095
2-Octanol	-115 to 262	0.9682	0.26244	535.9	0.26749	74.122
2-Propanol	-31 to 357	0.50726	0.25972	629.8	0.22	130.228
Acetic acid	-68 to 235	1.1799	0.2644	508.3	0.24653	60.095
Acetic anhydride	17 to 318	1.4486	0.25892	591.95	0.2529	60.052
Acetone	-73 to 333	0.86852	0.25187	606	0.31172	102.09
Acetonitrile	-95 to 235	1.2332	0.25886	508.2	0.2913	58.079
Acrylic acid	-44 to 273	1.3064	0.22597	545.5	0.28678	41.052
Benzene	13 to 342	1.2414	0.25822	615	0.30701	72.06
Benzoic acid	6 to 289	1.0259	0.2644	615	0.30701	72.06
Bromobenzene	122 to 474	1.0259	0.2644	615	0.30701	72.06



## Content: Graphs & Tables

### Graphs & Tables



Analyze key data quickly and accurately.

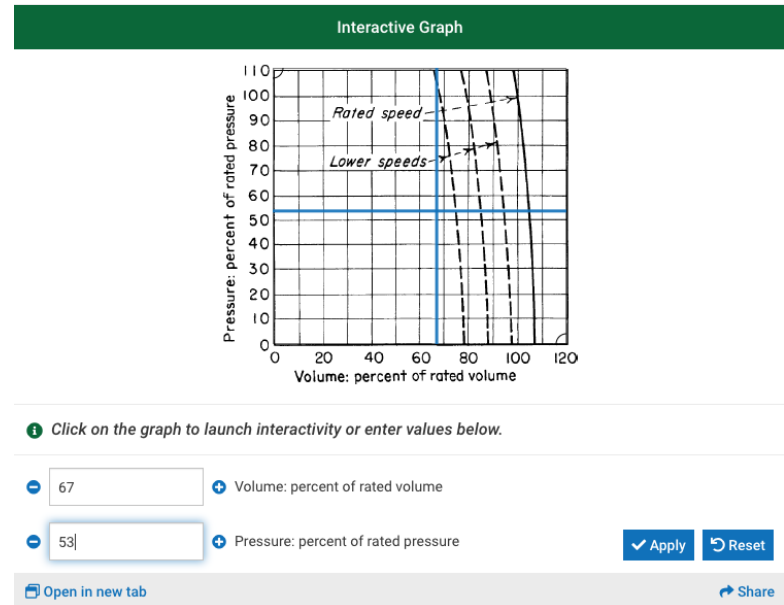
Thousands of interactive graphs and downloadable tables make it easy to analyze essential engineering data and confidently use it in real-world projects.

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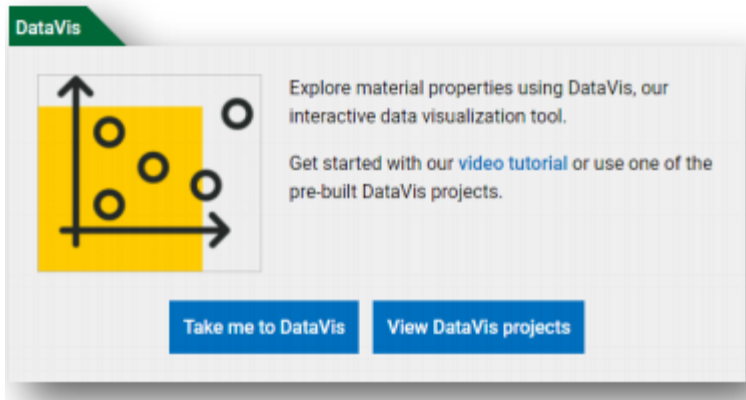
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Interactive graphs and downloadable tables help users visualize and analyze data. From the homepage, scroll down to the interactive tools section and click the button to view all available graphs or tables. Graphs and tables also appear as individual items in search results and within the context of book sections.

**Figure 10-82** Approximate performance curves for a rotary positive-displacement compressor. The safety valve in discharge line or bypass must be set to operate at a safe value determined by construction.



Graphs and tables can be viewed in context or in a separate browser tab. Click Share to generate a URL to link directly to a particular graph or table



DataVis is AccessEngineering's powerful data search and visualization tool for material properties.

Designed by faculty, DataVis displays property data in interactive dot-plots and scatterplots across a carefully curated dataset of over 200 materials and 65 properties.

This web based tool allows students to:

- Provides students with the data they need to understand material properties.
- Compare the range of each property within material classifications.
- Understand the variation of properties both within and across material classifications.
- Visualise how some properties differ by many orders of magnitude while others do not.
- Translate design goals and constraints while understanding how material properties intersect with these goals.
- Compare multiple properties that influence engineering design simultaneously.
- Factor cost into material selection.





## 1.0. CHAPTER PRELIMINARIES

Marylee Z. Southard, Ph.D. *Associate Professor of Chemical and Petroleum Engineering, University of Kansas; Senior Member, American Institute of Chemical Engineers; Member, American Society for Engineering Education*

For annotating content on AccessEngineering, we've teamed up with Hypothesis, an open source annotation tool that can be used across any digital resource. Create a free Hypothesis account to save and access annotations in AccessEngineering and across any other websites you use.

To annotate in AccessEngineering:

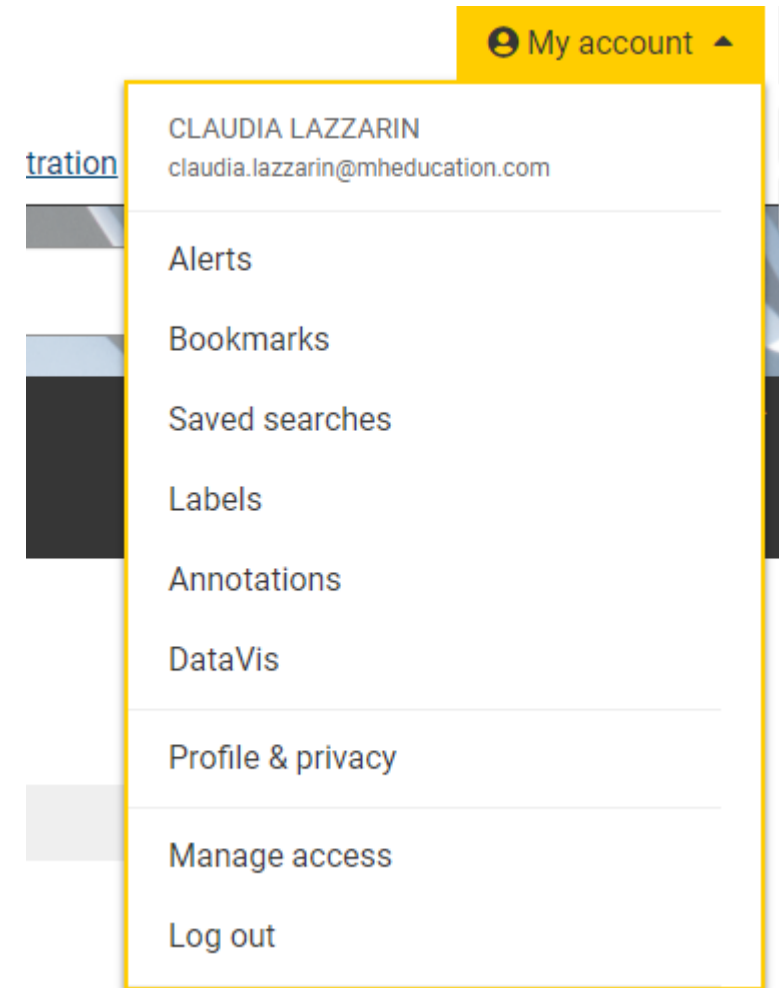
1. Click the Annotate button from any content page to open the Hypothesis toolbar
2. Choose a group to share annotations with or save to your personal account
3. Select text quickly highlight or add an annotation
4. Categorize your annotations with tags, edit or delete your annotations, or reply to annotations in a group

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- ✓ Select your interests to receive updates when new content is added in those areas





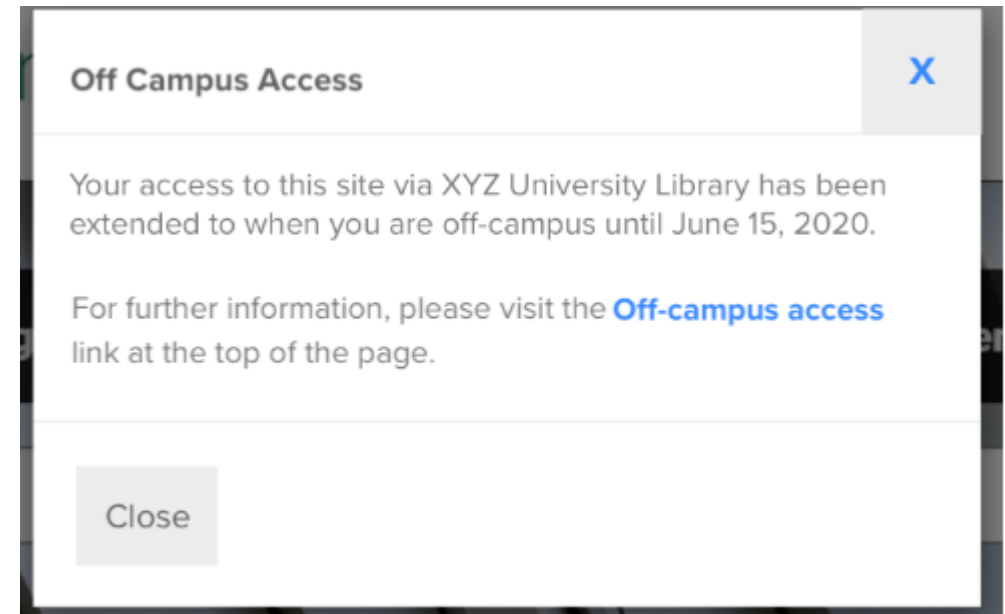
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"AccessEngineering provides a great platform for students to conduct the required research to complete real-world problems."

Dr. Carlotta Berry  
Associate Professor of Electrical and Computer Engineering  
Rose-Hulman Institute of Technology



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