

BuildMoNa-Workshop

27.09.2010

*Advanced Presentation Skills*



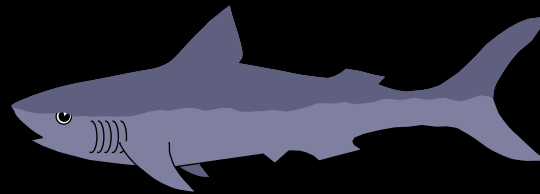
Roger Gläser

Institute of Chemical Technology

University of Leipzig

# *Bottom Line*

- More People Fear Speaking Than
  - Snakes
  - Sharks
  - Flying
  - Heights
- You Can Enjoy Speaking
- You Can Speak Successfully



# *Outline*



- Preparation
- Presentation
- Physical Skills
- Handling Questions
- Summary

# *Outline*



- **Preparation**
- **Presentation**
- Physical Skills
- Handling Questions
- Summary

# *Preparation*



- Audience Analysis
- Organization and Outline
- Visual Aids
- Practice

# *Preparation: Audience Analysis*



- Purpose of Talk
- Who Is Your Audience
- Tell Them What to Do

# *Audience Analysis 1*



- **Purpose of Talk**
  - What is the Problem
  - What is your Goal
  - What Action Do You Seek
  - Omit all Details -- Focus

# *Audience Analysis 2*

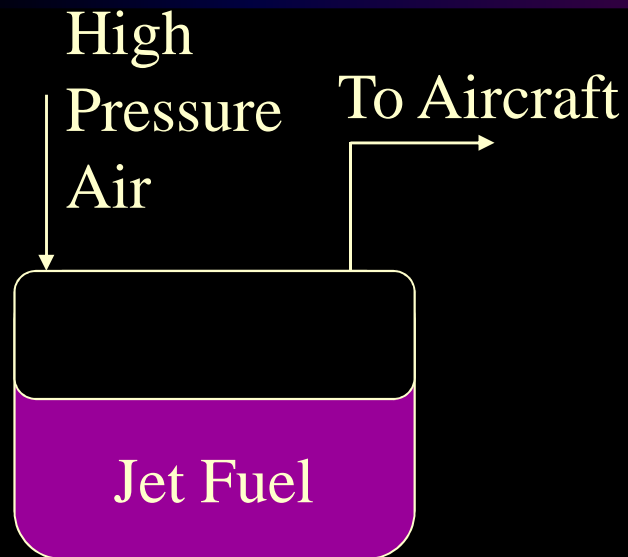
- **Who Is Your Audience**
  - Background
  - Language
  - What Do THEY Want
  - Can They Do What You Want
  - What Is the Merit of Your Goal



# *Audience Analysis 3*

- **Tell Them What to Do**
  - Conclusion First -- Bottom Line
  - Options → Recommendation
  - Be Specific and Quantitative
  - Help them Sell Your Ideas
  - Timeframe for Action
  - Short and to the Point

# *Audience Analysis: Example*



Airport Intermittent  
Fueling System  
Exceeds Ignition Limit

- **Options**
  - Elevate, Gravity Drain
  - High Speed Pumps
  - Less Volatile Fuel
  - Pressurize with  $N_2$
- **Communicate With**
  - Airport Manager
  - Chief Engineer for City
  - Local Newspaper

# *Preparation: Organization and Outlining*



- Purpose
  - Process is Easier
  - Presentation is More Effective
- Goal Setting
- Brainstorming
- Outline
- Result: Less Effort, Less Stress

# *Organization and Outlining: Goal Setting*



- Define Your Goal
- Do Audience Analysis
- Focus on the Action You Seek
- Keep it Short and Focused

# *Organization and Outlining: Brainstorming*



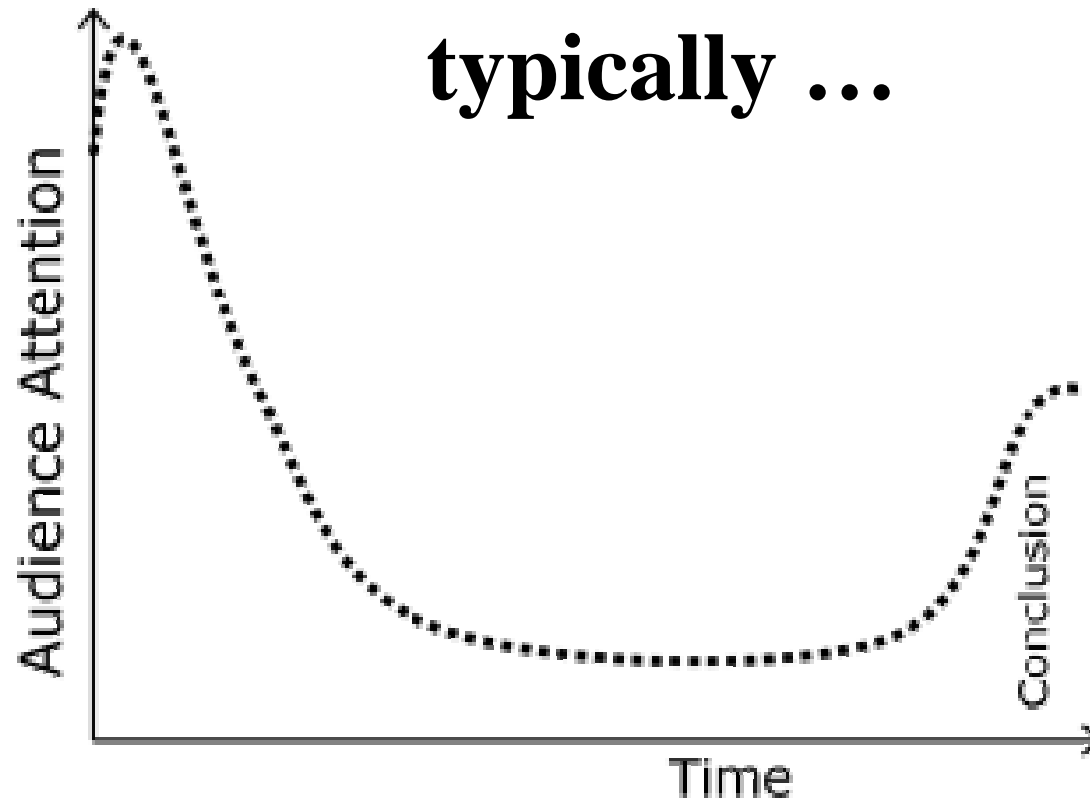
- Write it All Down
  - Details
  - Vast Concepts
- Ignore Ordering
- Avoid Being Judgmental

# *Organization and Outlining: Outline Development*

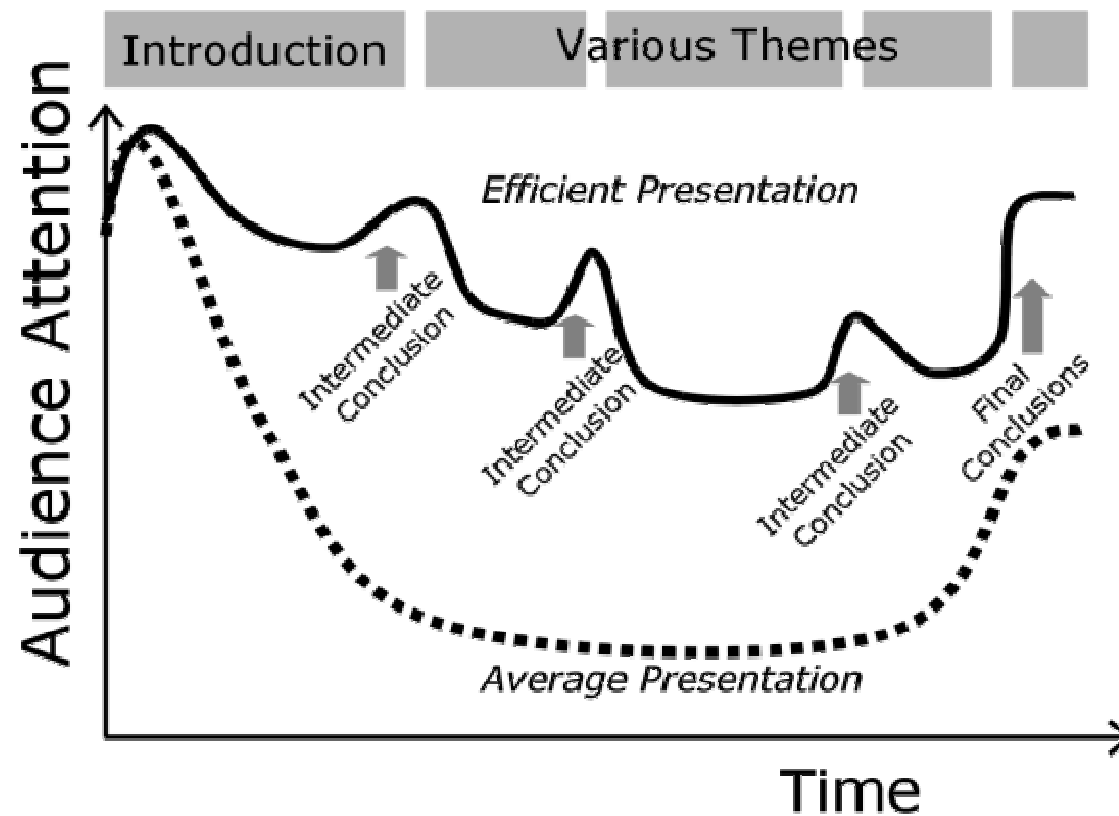


- Group Ideas
- Do Conclusions First
- Do Introduction Next
- Do Main Body Last
- Cut Everything You Don't Need

# *The Attention Curve 1*



# The Attention Curve 2





# Organization and Outlining: Outline Development 2

## **Introduction**

- goal 1
- goal 2
- goal 3

## **Experimental**

- experimental set up for reactions
- preparations
- analysis technique 1
- analysis technique 2

## **Results**

- catalyst characterization spectroscopy 1
- catalyst characterization spectroscopy 2
- catalytic reaction
- catalytic reaction at different T
- catalytic reaction at different pressures
- catalyst with promoter

## **Discussion**

- characterization
- catalytic results
- effect of promoters

## **Conclusions**

## **General Introduction**

*not too short, is very much appreciated by a large part of the audience*

## **Catalyst & Characterization**

- aims
- preparation of catalyst
- principles characterization technique 1
- results + interpretation
- principles characterization technique 2
- results + interpretation
- discussion of catalyst structure + conclusion

## **Catalytic Reaction**

- aims
- experimental set up reactions
- results catalytic reaction
- results catalytic reaction at different T
- catalytic reaction at different pressures
- catalyst with promoter

## **Conclusions**

- catalyst structure
- catalytic properties
- assessment and outlook

# *Organization and Outlining: Conference/Seminar*

- Minimum of Background
- Avoid Semantics
- What Have YOU Done?
- What Difference Does It Make?
- Where Does it Go from Here?

# *Organization and Outlining: Progress Report*

- Executive Summary, < 1 Page
- New Findings this Period
- Plans for Next Period
- Overall Goal -- What Do We Win if We Win?
- Request for Input

# *Preparation: Visual Aids 1*

## Types of Visual Aids

- Overheads
- Slides
- Blackboard
- Flipchart
- Printed Handout
- Video Tape
- Demonstration

## Comparison Factors

- Ease of Preparation
- Cost
- Effectiveness
- Flexibility
- Reusability
- Size of Audience

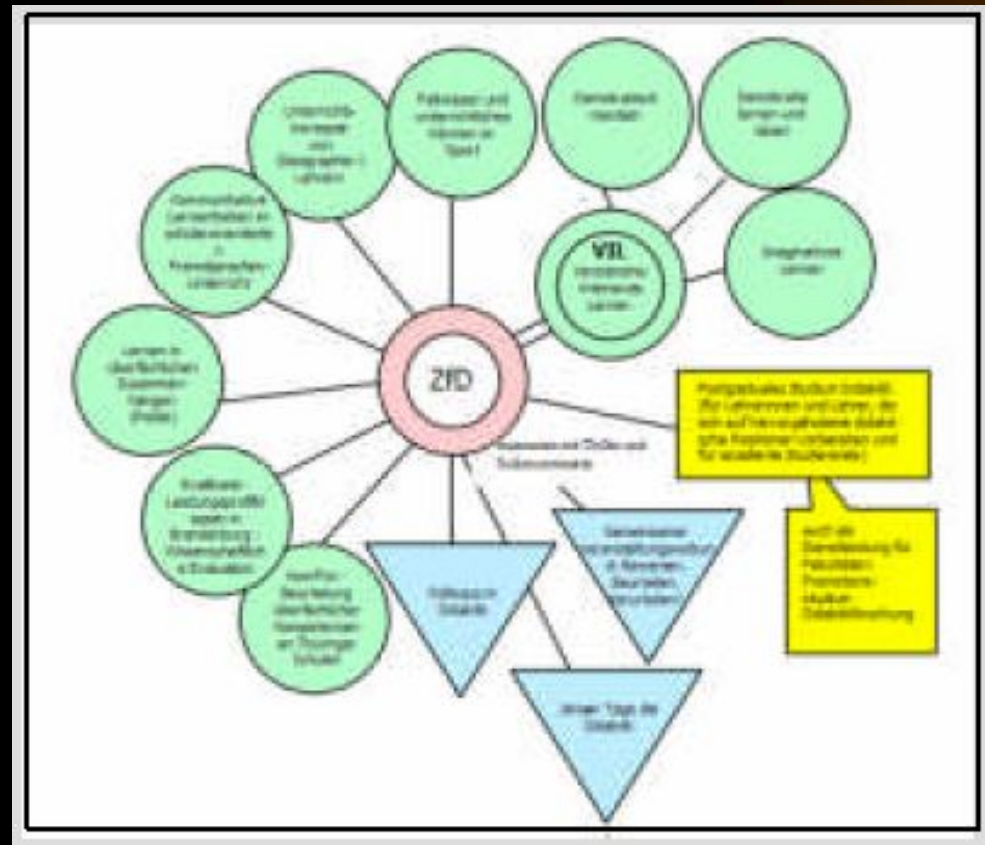
# *Preparation: Visual Aids 2*



- Types of Slides
  - Word, Graph, Table, Drawing
- Focus on Goals of Talk
  - Leave Out Excess Baggage
- Use of Slides
  - One Idea per Slide
  - Creativity, Highlights

# Preparation: Visual Aids 3

- Less than eight informations per slide



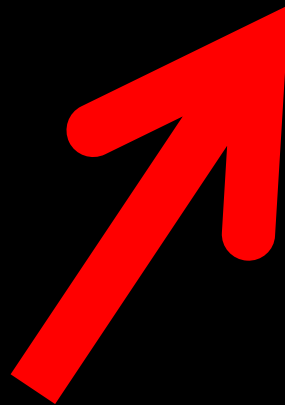
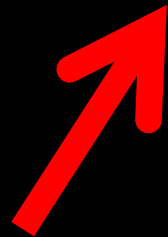
# *Preparation: Visual Aids 4*

- Limited number of colors



# *Preparation: Visual Aids 3*

- Make it **BIG**, **BIGGER**







# Ihre Werbung bei uns!

Genial!



IHRE KRANKENVERSICHERUNG  
IST VIEL ZU TEUER!!!



- Bei uns finden Sie genau,  
was Sie suchen.  
Garantiert.

- Wir beraten Sie gern.  
Jederzeit.

- Unsere Designer erfüllen  
jeden Wunsch.



# *Advantages of Supercritical Fluid CO<sub>2</sub> for Phase Transfer Catalysis*

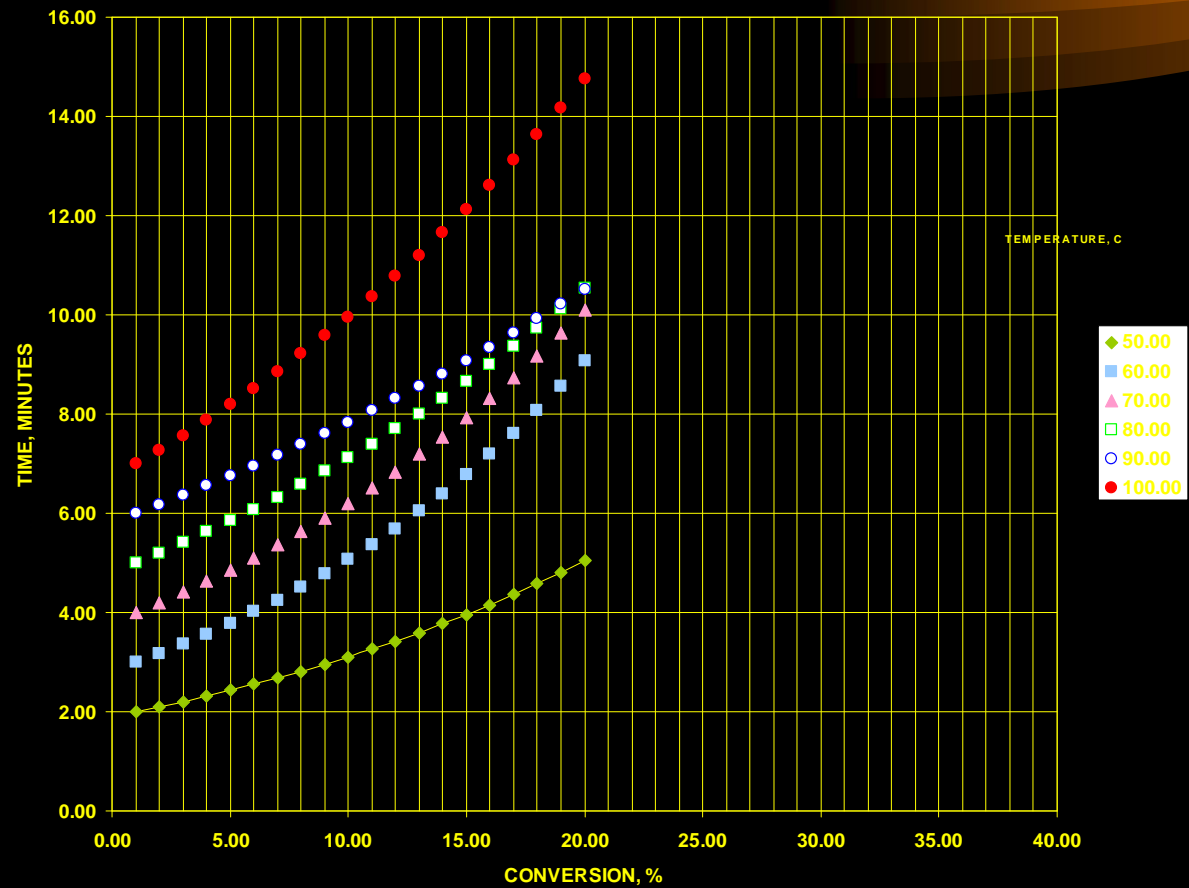
- More and more industrial processes are now taking advantage of the unique properties of supercritical fluids.
- It is well known that CO<sub>2</sub> is normally regarded as being environmentally benign.
- Supercritical fluids have low viscosity and high diffusivity for enhanced mass-transfer.
- It is extremely easy to separate the solvent from the reaction products.
- This same technique could be applied advantageously to other reactions.

# *SCF CO<sub>2</sub> For PTC*

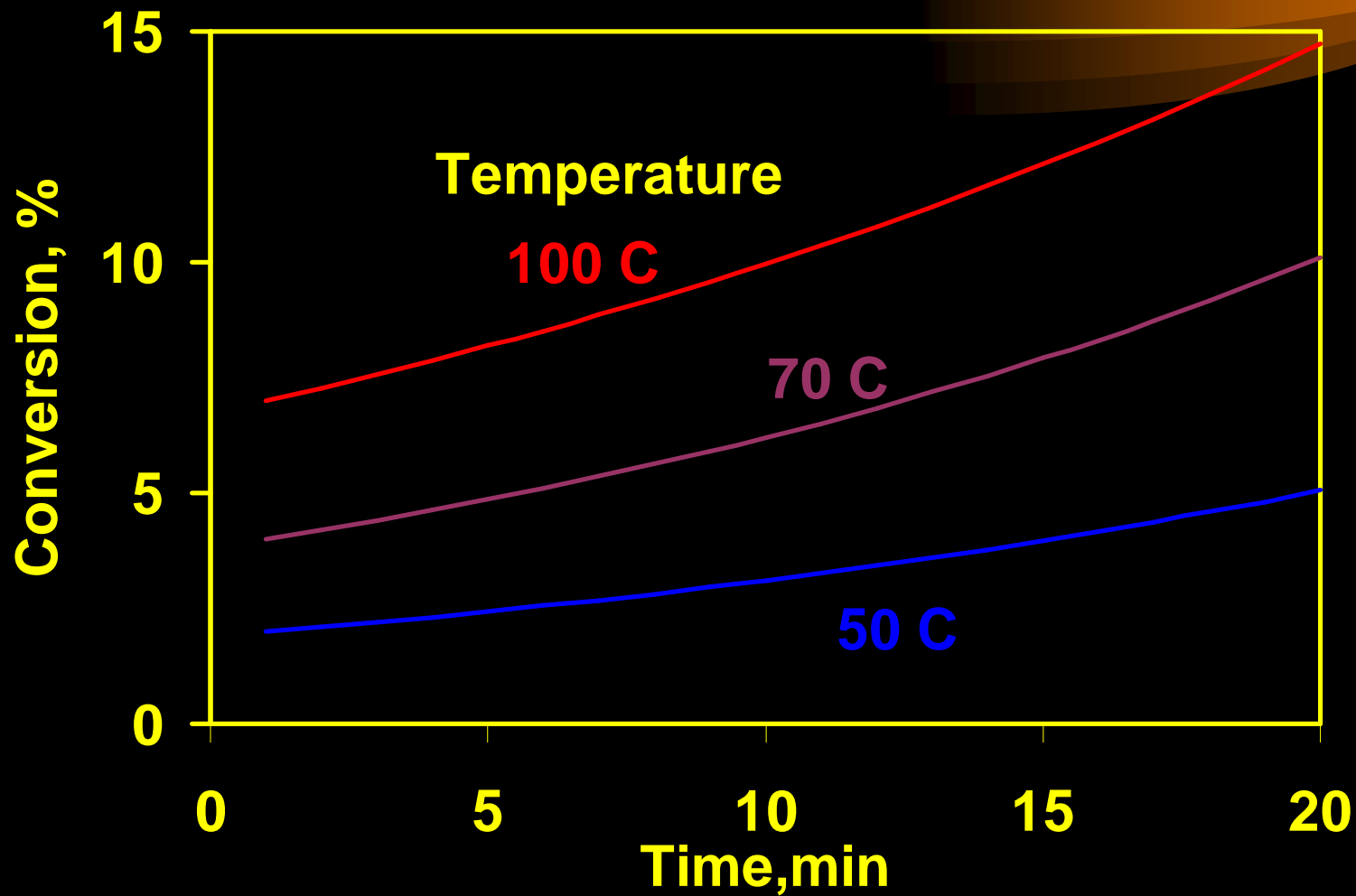


- Environmentally Benign
- Enhanced Mass Transfer
- Solvent Removal
- Other Reactions

# Graph Example



# *Alternate Graph Example*

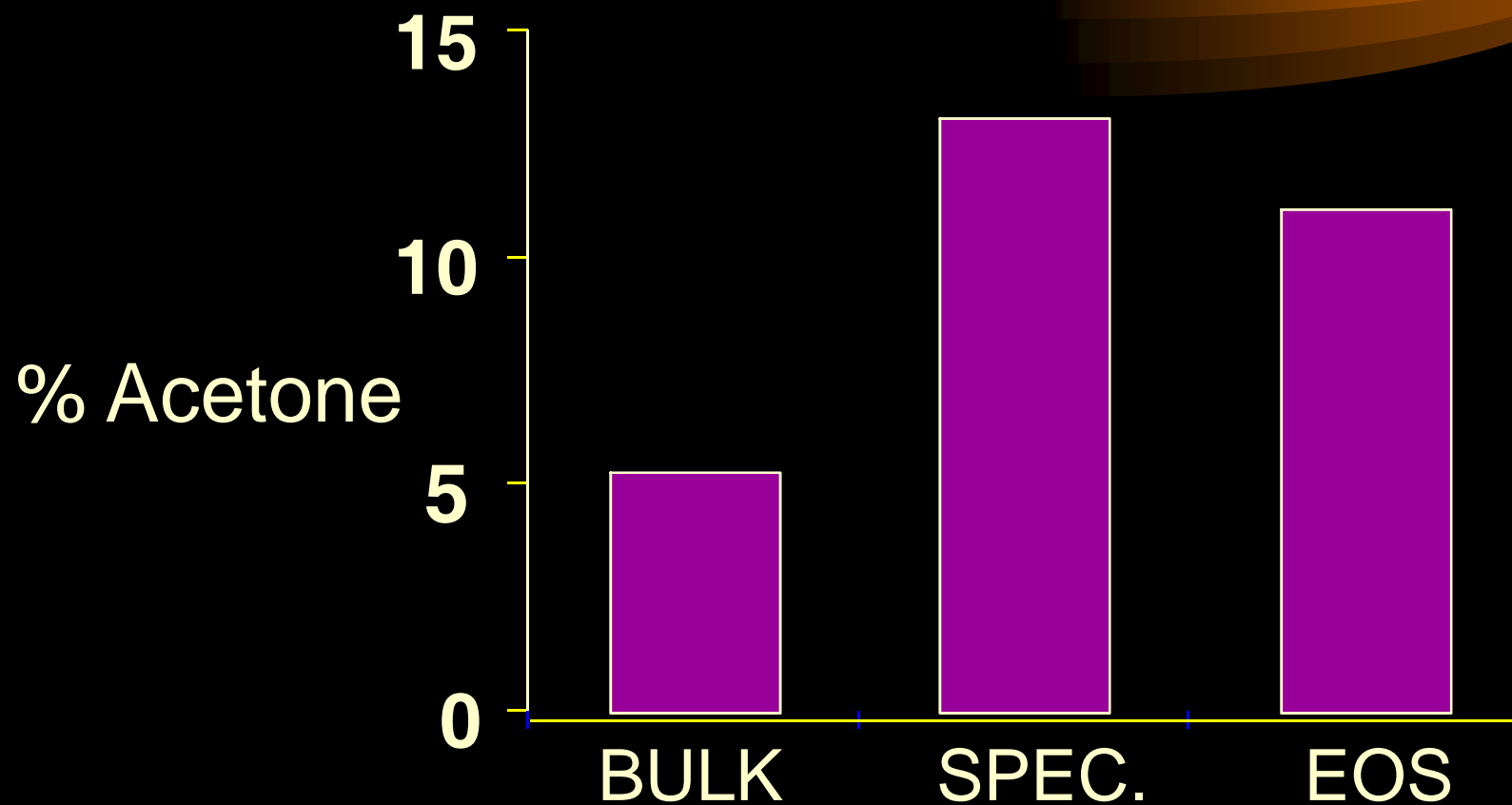


*Local Composition Enhancement*  
*Mole Fraction of Acetone Near a Phenol Blue*  
*Molecule, SCF CO<sub>2</sub>, 100 bars, 35°C*

<u>Bulk</u>	<u>Spectroscopic</u>	<u>Eq. of State</u>
0.0111	0.0513	0.0443
0.0306	0.0975	0.0895
0.0512	0.1316	0.1098
0.0734	0.1698	0.1533

Data of Kim and Johnston, 1987

*Local Composition at a Phenol Blue  
Acetone in SCF CO<sub>2</sub> at 35°C, 100 Bars*



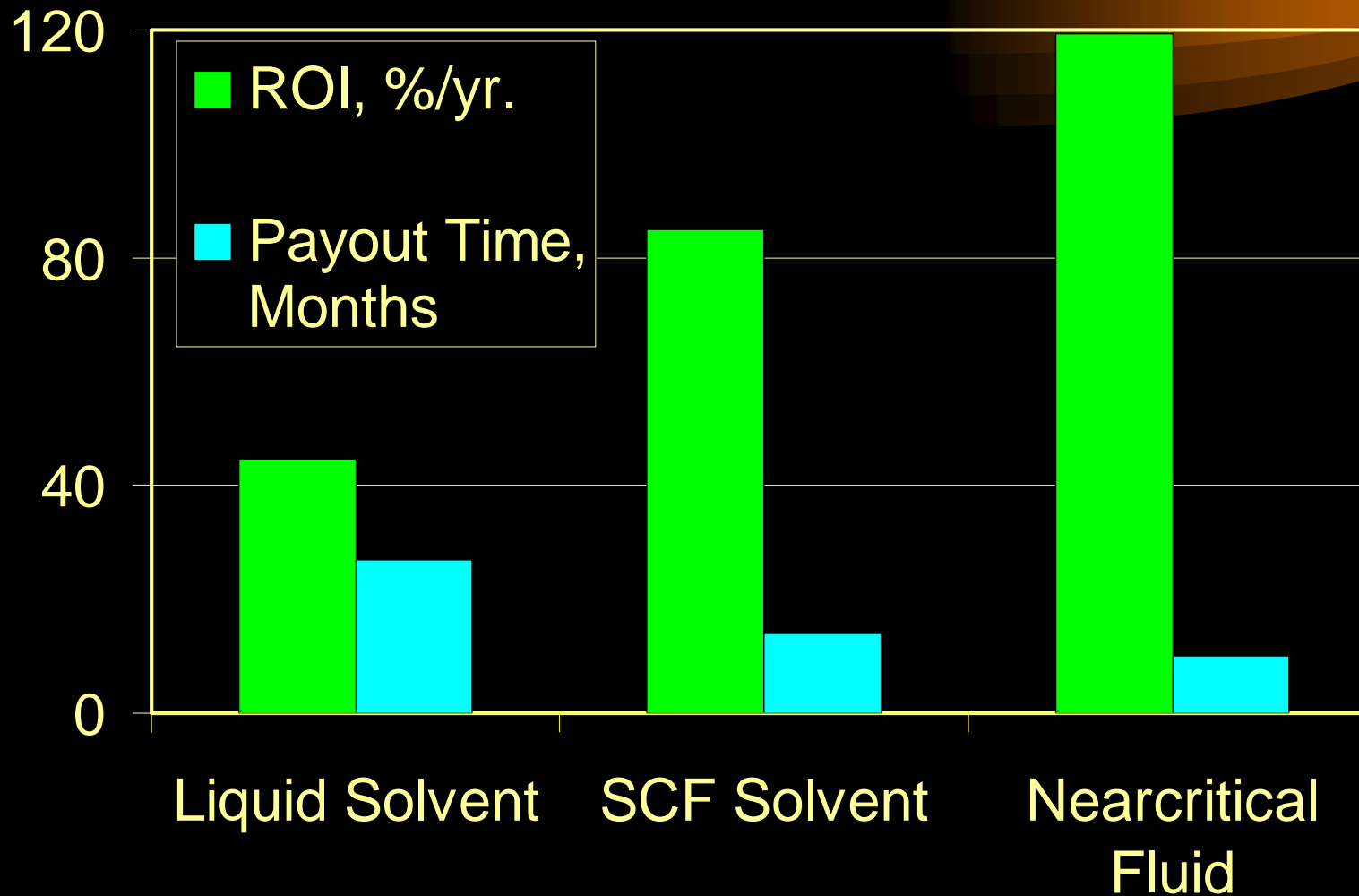
(Kim and Johnston, 1987)

# Process Alternatives

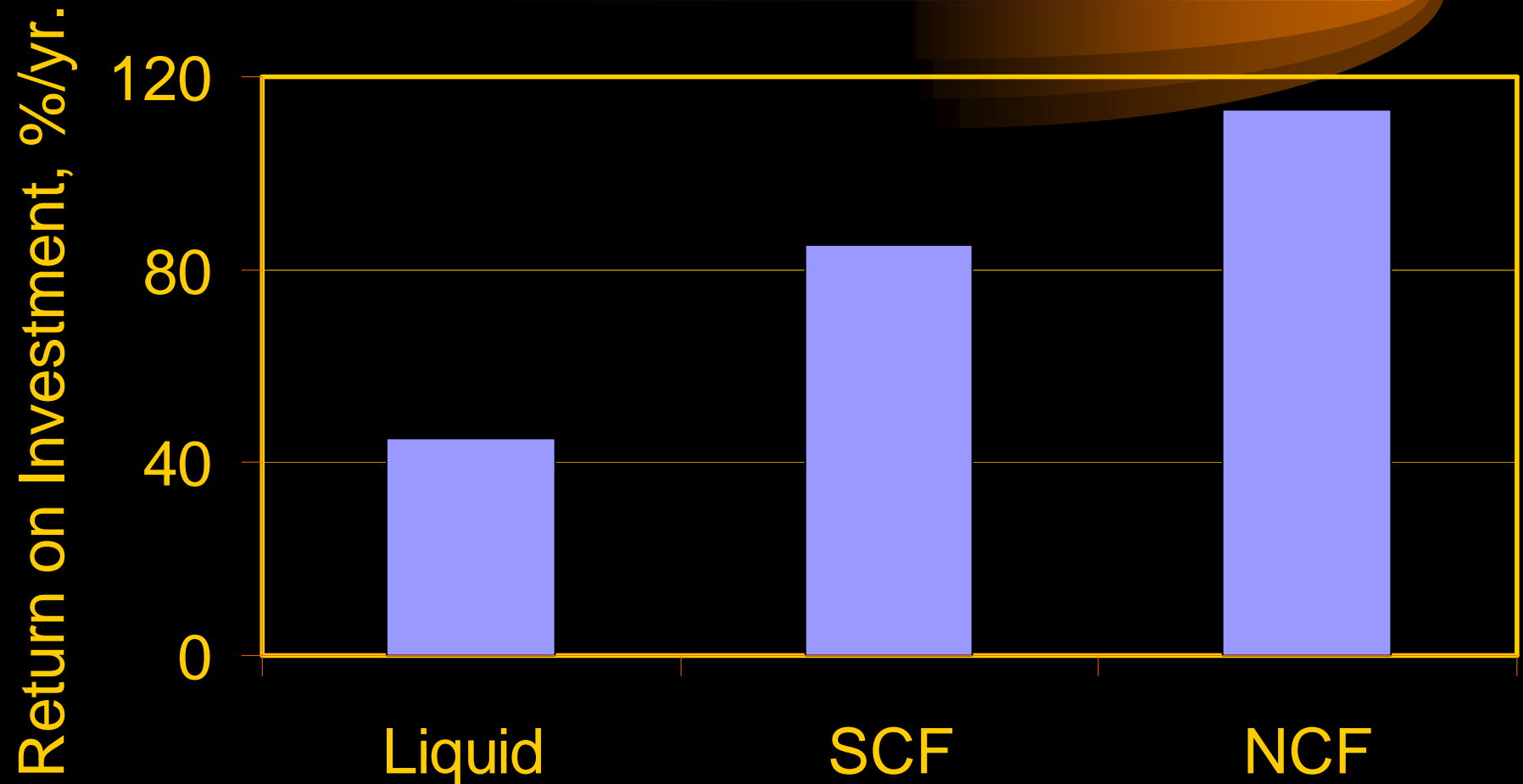
	Liquid Solvent	SCF Solvent	Nearcritical Fluid
Major Capital Equipment, K\$/yr.	9800	7100	5800
Ancillary Equipment	1960	1420	1160
Control Systems	1372	994	812
Foundations, Piping, etc.	2254	1633	1334
Total Equipment Cost	15386	11147	9106
Working Capital	200	201	202
Total Capital Cost, K\$/yr.	15586	11348	9308
Chemicals, K\$/yr.	19800	18300	17400
Labor	200	200	200
Maintenance	1078	781	638
Supervision and Overhead	150	150	150
Insurance and Taxes	300	250	250
Depreciation and Interest	3117	2270	1862
Total Operating Costs, K\$/yr.	24645	21951	20500
Product Price, \$/kilo	1.58	1.58	1.58
Annual Product Production, Mkilo	20	20	20
Total Income, K\$/yr.	31600	31600	31600
Net Profit	6955	9649	11100
Return on Investment, %/yr.	45	85	119
Payout Time, Months	27	14	10



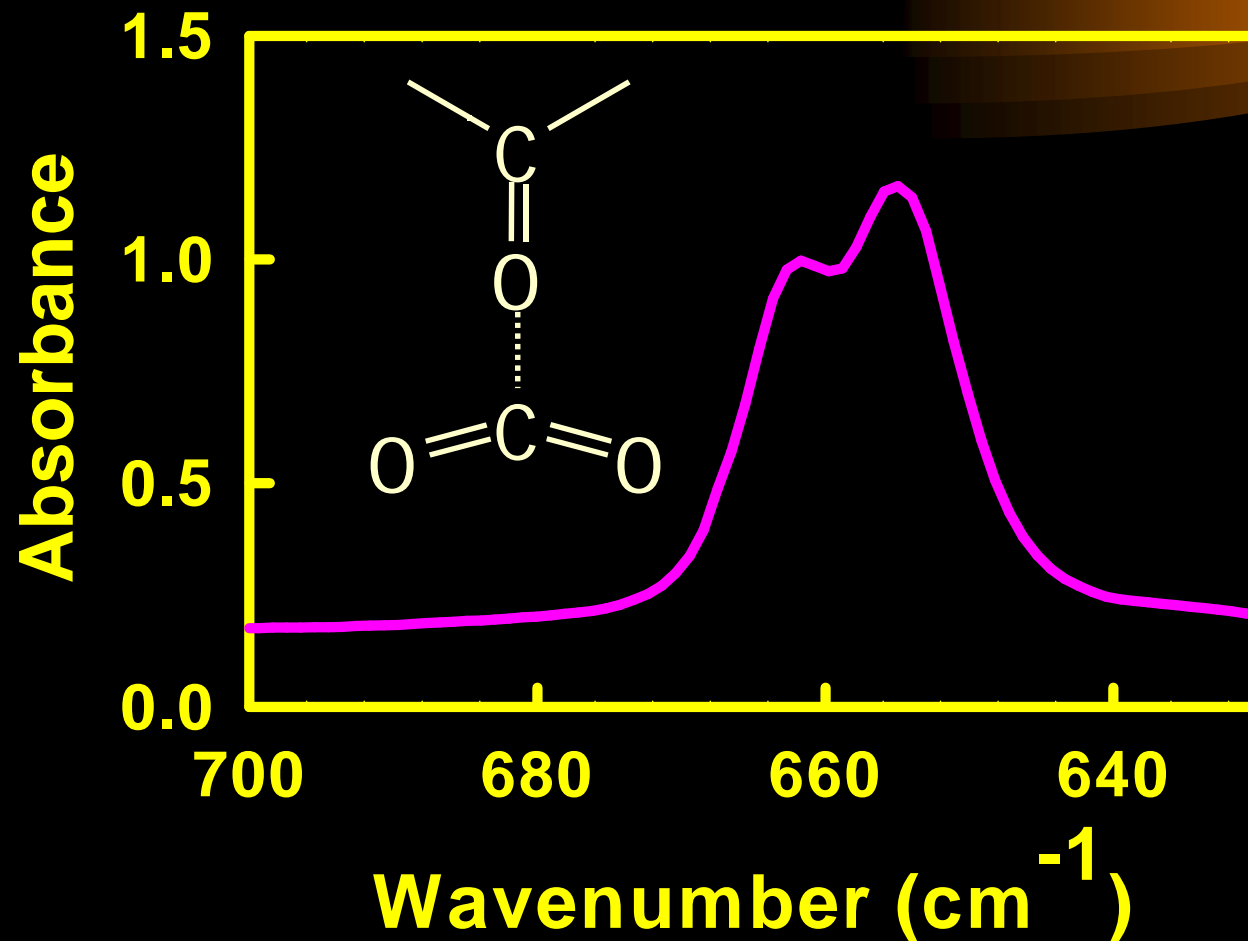
# *A Graph is Always Better: Process Alternatives*



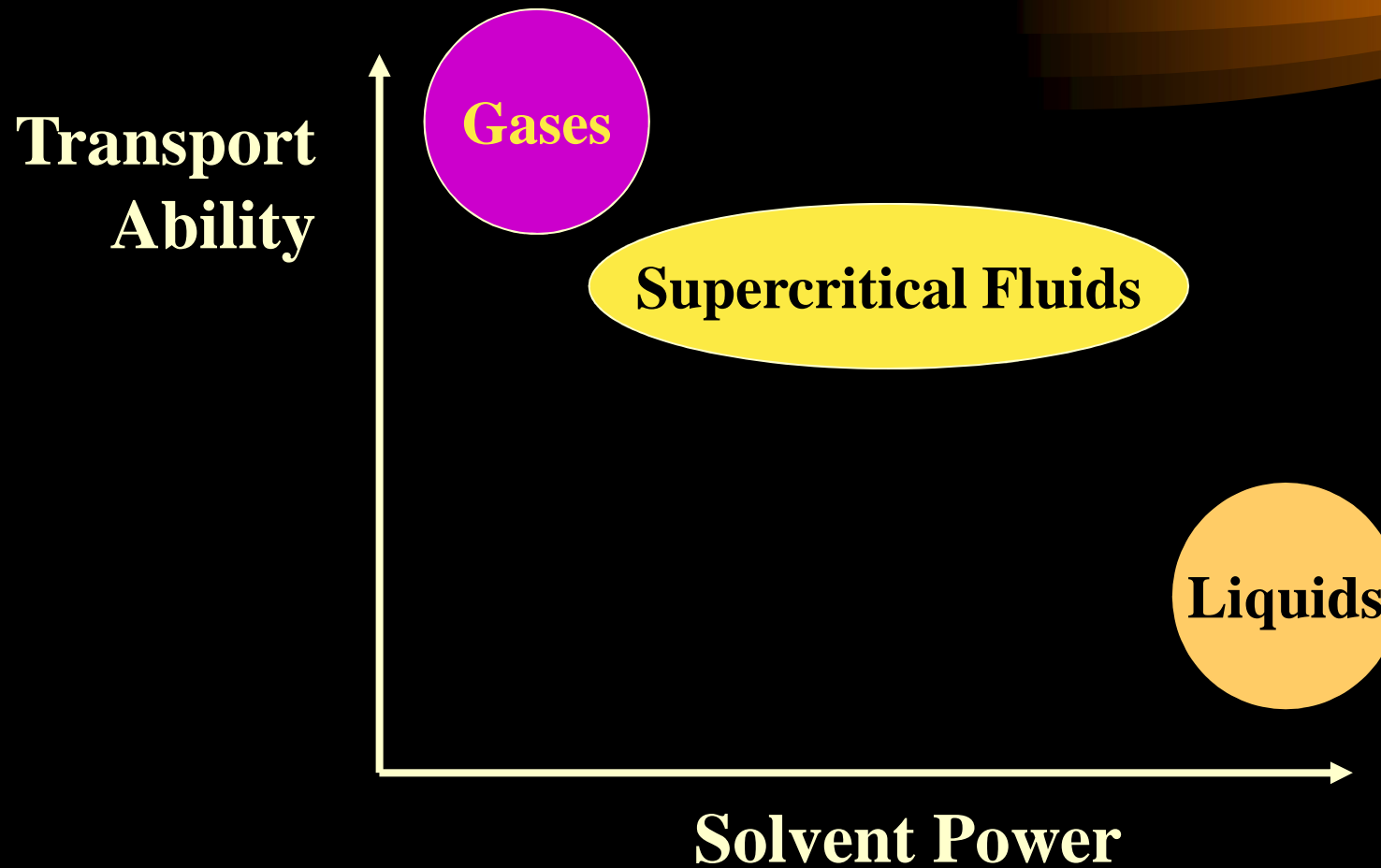
# *A Simpler Graph is Better Yet: Process Alternatives*



# *CO<sub>2</sub> Absorption in PMMA by IR*

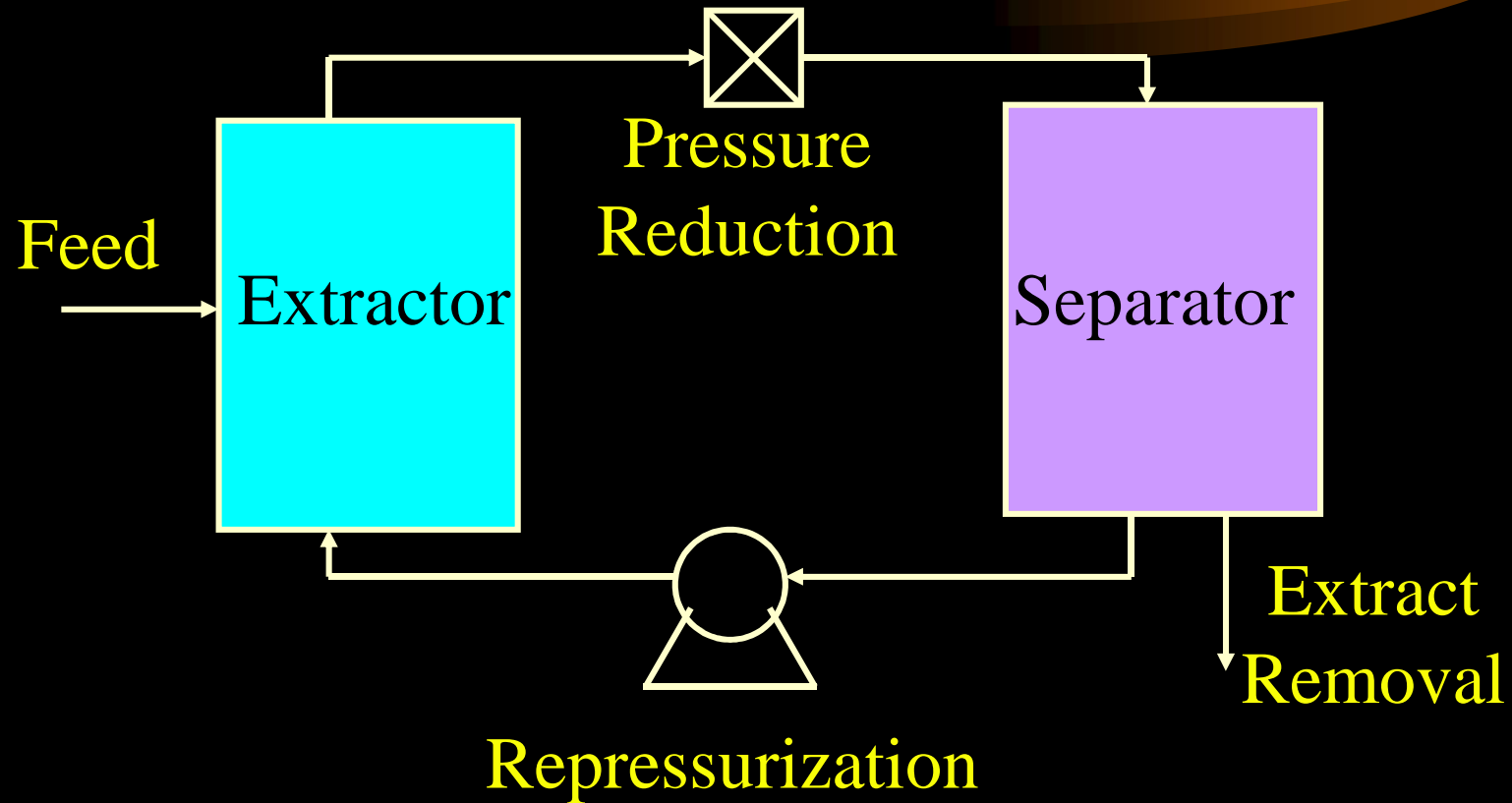


# *Supercritical and Nearcritical Fluids For Extraction and Reactions*

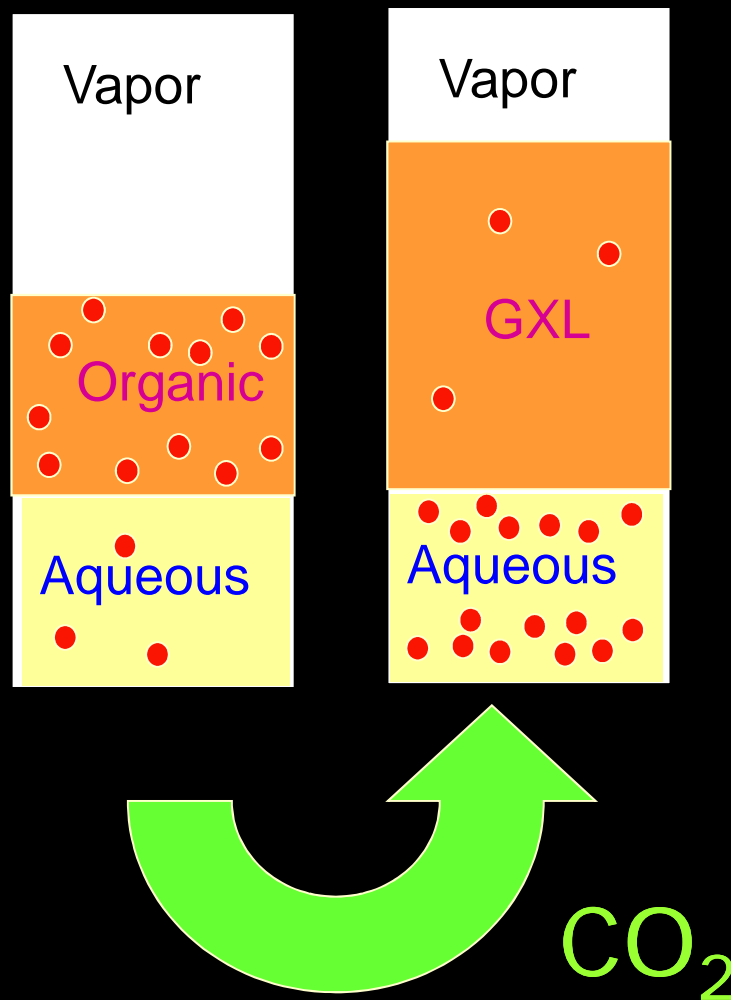


# *Typical SCF Extraction Process*

*Solid Feed is Batch; Fluid Cycle is Continuous*



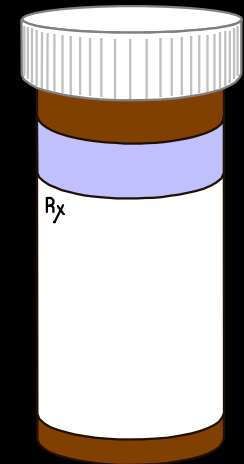
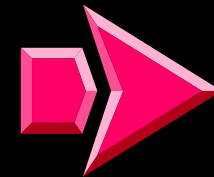
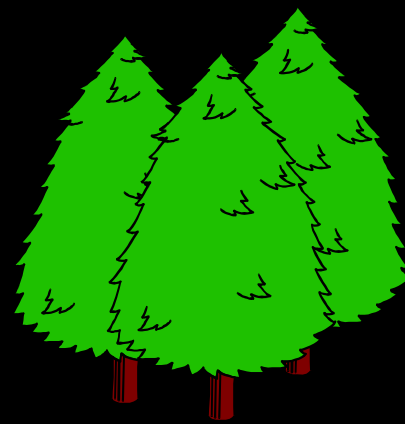
# *CO<sub>2</sub> Enhanced Aqueous Extraction*



- Much CO<sub>2</sub> Dissolved in Organic Phase
- Little CO<sub>2</sub> Dissolved in Aqueous Phase
- CO<sub>2</sub> is a Poor Solvent for Hydrophilic Species
- Recycling of Hydrophilic Catalysts

# *Pharmaceuticals -- Merck*

- Natural Products
- Safe, Clean Solvent
  - Carbon Dioxide
- Extraction
- Purification
- Patents Filed
- Albany Plant



*CO<sub>2</sub>+Methanol+FC-75*



20 °C, 49 bar



# SCF CO<sub>2</sub> Purification of Biomedical Polymer



Single Stage, 40°C, 100 bars



# *Summary*

- **Multidisciplinary Collaboration**
  - Engineers Synthesize Catalysts
  - Chemists Do Process Design
- **Sustainable Technology**
  - More Benign Processes
  - Improved Products, Economics
- **Novel Solvent Systems**
  - Supercritical Fluids
  - Nearcritical Fluids
  - Gas-Expanded Liquids

# *Outline*



- Preparation
- Presentation
- **Physical Skills**
- **Handling Questions**
- Summary

# *Preparation: Practice*



- Practice
- Practice
- Practice
- Practice

# *The Presentation*



- Getting Ready
  - Be Prepared
  - Arrive Early
  - Check Room, Projector, etc.
- Getting Started
- Giving the Presentation
- Ending the Presentation

# *Getting Started*



- Relax, Be Enthusiastic
- Get in Touch
- The First Minute
- Never Apologize
- Give your Bottom Line
- Outline the Talk

# *Giving the Presentation*



- No Text, No Notes
- Prepare for Each Visual
- Preview Each Visual
  - Tell Them What They are Seeing
  - Give Enough Time to Digest

# *Ending the Presentation*



- Summarize
  - Action Item
  - Timeframe
- Never Run Over
- Tell Them You're Through



# *Physical Skills*



- Eye Power
- Voice Power
- Body Power

# *Physical Skills: Eye Power*

- **Problem**
  - Scanning
- **Negative Effects**
  - Causes Nervousness
  - No Individual Recipients
  - Accelerated Pace
- **Solution**
  - Lock Eyes
  - Hold for Entire Thought
  - Move Around Room
  - Avoid Looking at Projector, Screen

# *Physical Skills: Voice Power*

- **Problems**
  - Too Low
  - Monotone
  - Too Fast
- **Negative Effects**
  - Difficult to Hear
  - What is Important?
  - Frustrating to Follow
- **Solutions**
  - Speak Loudly
  - Speak Clearly
  - Use Inflection
  - Pause Frequently

# *Physical Skills: Body Power*

- **Problems**

- Shifting
- Moving Without Purpose
- Locking Hands
- Holding Objects

- **Negative Effects**

- Lower Confidence
- Distraction

- **Solutions**

- No Notes
- No Pointer
- Balanced Stance
- Hands to Sides
- Gestures when Appropriate

# *Handling Questions*

- **Problem**
  - Lacks Structure
- **Negative Effects**
  - Less Control
  - Increased Pressure
  - Group Discussion
- **Solution**
  - Build Structure
  - Procedure

## *Handling Questions: Preparation*

- Know Your Weak Spots
- Figure Out Most Likely Questions
- Prepare Answers
  - May Use Extra Visuals
- Plant Key Questions

## *Handling Questions: Procedure*

- You Choose the Questioner
- Listen to the Whole Question
- Turn Away from Questioner
- Restate Question As You Wish
- Make Answer Brief and Focused
- Do Not Become Emotional

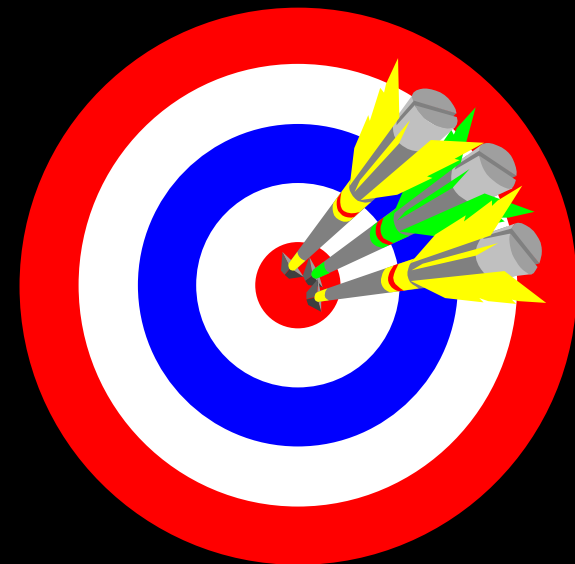
# *Handling Questions: Attitude*

- Avoid Feeling Defensive
- Adapt Answer to Purpose of Question
  - Seeks Clarification
  - Raises an Objection
  - Shares Information
- General Guidelines
  - Stay Positive -- Be the “Good Guy”
  - “I Don’t Know”



# Summary

- **Steps to Follow**
  - Preparation
  - Presentation
  - Physical Skills
  - Handling Questions
- **Communications**
  - More Enjoyable
  - More Effective



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