

A MERICAN | NSTITUTE OF C H E MICAL E NGINEERS

- The Newsletter -

AIChE Meeting, December 11, 1963  
(Joint meeting with the AIAA)

PLACE: IIT Research Institute  
Chemistry Building  
3450 S. Dearborn Street  
Chicago, Illinois

PROGRAM: Tour of IIT Research Institute  
5:15 to 6:15 P.M.

Cash Bar -- 6:15 to 6:45 P.M.

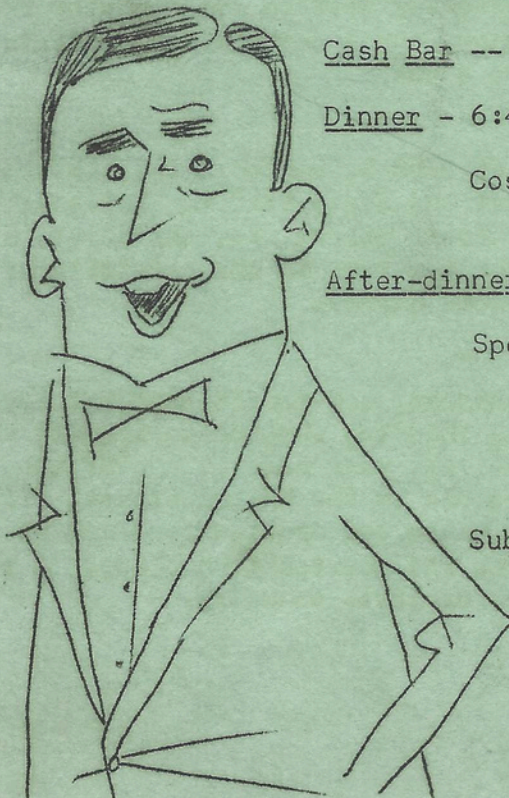
Dinner - 6:45 P.M.

Cost: \$4.00 - members  
\$5.00 - non members

After-dinner program

Speaker: Dr. Oswald H. Lange  
Asst. Director for Scientific  
& Technical Analysis of the  
George C. Marshall Flight Center  
Huntsville, Alabama

Subject: Design Features of the  
Saturn Launch Vehicles



IITRI TOUR PLANNED TO PRECEDE DECEMBER MEETING

For those who are interested in new scientific developments, a tour of IIT Research Institute facilities has been arranged for the Chicago Section at 5:15 p.m. on December 11 prior to the monthly meeting. Numerous exhibits will be on display, and several interesting demonstrations will be shown. The tour will include the following:

1. Demonstration of a methanol fuel cell
2. Demonstration of flash photolysis
3. Use of shock tubes to demonstrate propellant sensitivity
4. Tour of chemical propellents laboratory where high energy compounds are prepared.
5. Tour of computer center which includes IBM-7090 and Univac 1105 computers
6. Tour of nuclear reactor installation
7. Setup in chemical engineering section for studying back streaming in vacuum pumps, and a setup to demonstrate the shooting of cereal from a gun

IIT Research Institute is located at 3450 S. Dearborn St., Chicago. Free parking in lot near 35th Street and State Street. Entrance to the parking lot is on east side of State Street near the corner of 35th. The group should assemble for the tour in the cafeteria of the Chemistry Building at 3450 S. Dearborn Street.

IIT Research Institute is an independent, non-profit contract research organization which has been serving industry and the government since 1936. Its \$24 million sales volume last year made it one of the largest contract research organizations in the United States. IIT Research Institute undertakes both basic and applied research in all disciplines of the physical sciences and related technology. A staff of 1700 employees works on over 800 projects annually.

For Decemb

Only a dec  
fiction; t  
H. Lange w  
within the  
moon missi

Missions o  
ment and s  
substantial  
priorities  
the space v  
niques will  
Saturn laun  
determining  
mention cor  
vehicles ar  
selection o

The contrib  
of propella  
areas are l  
bility, the  
interface.  
technology,  
illustrated  
to future o  
by an outli

Mail the at  
Ziegenhorn

For December....

DESIGN FEATURES OF THE SATURN LAUNCH VEHICLES

Only a decade or so ago, a flight to the moon was a subject for science fiction; today it is a near reality. At the December meeting, Dr. O. H. Lange will discuss the significance of the manned lunar project within the national space program and outline the various plans for moon missions.

Missions of this type require a very complex effort of vehicle development and support functions; not only are the engineering problems substantial but other considerations such as time schedules, mission priorities and the like impose severe constraints. The interrelation of the space vehicle concept and the various modes of rendezvous techniques will be treated in some detail. The main design features of the Saturn launch vehicles will be described and lead into the principles determining the selection of techniques and components. The talk will mention conventional and special purpose propulsion systems aboard the vehicles and illustrate some of the governing considerations such as selection of "risks" and success probability.

The contributions by modern chemistry and the criteria for the selection of propellants are of course of paramount importance. Some typical areas are liquid hydrogen technology and handling, combustion instability, the limitations of solid propellants and the chemical-material interface. Typical engineering problems encountered in liquid hydrogen technology, engine design, insulation and mission impact will be illustrated. High energy propellants and their expected contributions to future developments will be considered. The talk will be concluded by an outline of future trends in vehicle technology.

MAKE YOUR RESERVATION

N O W

FOR DECEMBER 11 MEETING

Mail the attached reservation card now or telephone Mr. George Ziegenhorn (451-2900), Podbielniak, Inc., Franklin Park, Illinois.

## ABOUT OUR SPEAKER . . .

Dr. Oswald H. Lange

Dr. Oswald H. Lange is Assistant Director for Scientific and Technical Analysis at the NASA-Marshall Space Flight Center in Huntsville, Ala. The director is Dr. Wehner Von Braun.

Dr. Lange was born June 1, 1912 in Haynau, Germany, and became an American Citizen on May 5, 1959. He received his Master of Science degree in mathematics, physics, and chemistry at the University of Breslau, Germany and his Ph.D. in electronics, mathematics and physics at the Berlin Institute of Technology.

From 1936 until 1939 he had a research scholarship with the Electronic Department of the Heinrich Hertz Institute in Berlin. Then, and until 1945, he worked at the German Army Missile Center in Peenemuende, first on V-2 guidance and control and later in charge of "Wasserfall" (German AA Guided Missile) guidance and control, ground systems and launching.

In early 1947 he resumed his work on surface-to-air guided missiles at the Royal Aircraft Establishment in Farnborough, Great Britain, where he held the position of a principal scientific officer.

He was with the Advanced Design Department of the Glenn L. Martin Company in Baltimore in 1954 and 1955. Then he joined the Computation Laboratory of the Army Ballistic Missile Agency in Huntsville as a Deputy Director, a position he held until February 1959. At that time he became the Project Director for the Saturn Space carrier vehicles. His office, designated the Saturn Systems Office, has charge of the project management of the Saturn I, Saturn IB and Saturn V vehicles. Dr. Lange was appointed to his present position in August 1963.

He is author of several papers on computers, homing guidance and related instrumentation which appeared in British Institute of Electrical Engineers monographs and in Royal Aircraft Establishment Farnborough reports. He is the co-author of the book, "Space Carrier Vehicles", and a contributor to the symposium, "From Peenemuende to Outer Space". He is a member of the Editorial Board of "Handbook for Astronautical Engineering" and has contributed a variety of articles on management practices and the Saturn Programs to professional magazines.

MORE ABOUT

This article  
for you at  
February 1

The afternoon  
you an opportunity  
meeting co-  
entitled "The  
the viewpoint  
ment. Four  
scope of a  
research a  
government  
research u

Program--

What is Ex  
Dr.  
Canada

Research a  
and it must  
Dr. Brown  
their impl

Evaluation  
Dr.

This paper  
selection  
analysis m  
the life o  
future pro

MORE ABOUT THE ALL DAY SYMPOSIUM . . .

"Economic Evaluation of R and D" Planned  
for Non-Technical Afternoon Session

This article is the first in a series describing the program planned for you at the all-day symposium to be held at the Sherman House on February 10.

The afternoon schedule opens the symposium with a dual program and gives you an opportunity to attend either a technical or non-technical session meeting concurrently from 1:30 to 5:30 p.m. The non-technical session entitled "Economic Evaluation of Research and Development" will consider the viewpoint of management on various aspects of research and development. Four broad areas will be covered:- (1) selecting the size and scope of a research program, (2) determining the various functions of research and how they should be implemented, (3) participating in government sponsored research, and (4) considering the effect of research upon the company's image to the investor.

Program--

What is Expected of Research and Development?

Dr. Charles Brown, Vice President, United States and Canadian Operations, Abbott Laboratories

Research and development has a broad function to serve in a company, and it must be organized to meet its responsibilities efficiently. Dr. Brown will discuss these aspects of research and development and their implementation.

Evaluation of Projects and Their Relative Worth for R & D

Dr. Robert J. Smith, Sr., Research Associate, Sinclair Co.

This paper will discuss what factors are to be considered in making the selection of research projects and the funds to be allocated. A proper analysis must also consider cut off points, re-evaluation throughout the life of the project, accuracy of the estimate and its effect on future profits.

Government Financed Research In Industry's Research Laboratories  
Dr. E. H. Schultz, Executive Vice President and Director,  
IIT Research Institute

The government is spending billions of dollars upon research, most of which is contracted to private companies. Dr. Schultz will discuss when and under what conditions it is advisable to accept government research, and the procedures to be followed by companies desiring to enter this field. Problems and disadvantages associated with government research contracts will also be covered.

Impact of Corporate Research and Development on the Stock Market  
Peter Sawers, Manager of Investors' Service Program, IIT  
Research Institute

The influence of a company's research and development program upon stock prices is affected by several factors -- the type of industry, the growth pattern of the company, the efficacy of research and the speculative nature of the market. Mr. Sawers will discuss how the investor interprets these factors when evaluating the company's research and development expenditures.

ARE YOU INTERESTED IN COSTS?

Those engineers whose work is concerned with costs may be interested in learning about the Chicago Section of the American Association of Cost Engineers. The AACE is comprised of individuals whose activities are in some way connected with costs. Presently it has local committees active in the areas of capital equipment estimating, profitability analysis, operating cost control and capital cost control.

Meetings are held monthly. The next meeting will be a workshop to be held at 6:30 p.m., Thursday, December 5 at the Institute of Gas Technology. For further information, contact:

C. L. Tsaros  
Phone: CA 5-9600, Ext. 634  
Institute of Gas Technology  
17 West 34th Street  
Chicago 16, Illinois

\$ \$ \$

\$ \$

Let's Gi

With its  
placed i  
issue of  
this sou  
Knowing,  
any writ

You prob  
or who h  
this in  
personal  
new memb  
well. A  
to furth

Take tim  
our prog  
faciliti  
is an ex  
remainde

Have the  
Corn Pro

M A R K



Let's Give the Membership Drive Our Personal Touch!

With its goal of 600 members not quite reached, an obstacle has been placed in the path of the membership committee. Starting with this issue of the Newsletter, circulation is limited to members only, and this source of contacting prospective members has come to an end. Knowing, however, that personal solicitation is more effective than any written appeal, the membership committee is asking for your help.

You probably know of some reluctant colleague who hasn't been asked or who has good intentions but has put off sending in his dues. With this in mind and since the membership committee cannot possibly personally contact all prospects, we are asking every member to get a new member. You will not only help our section but the new member as well. A strong section with a large active membership will be able to further the growth of our profession.

Take time now to badger your recalcitrant colleague. Tell him about our program for our December meeting. The tour of IIT Research facilities and the talk by Dr. Lange on our nation's space activities is an excellent example of the type of programs he can expect for the remainder of the year.

Have the new members mail the \$3.00 dues check to A. A. Winkler, Corn Products Co., Moffett Technical Center, Box 345, Argo, Illinois.

MARK YOUR CALENDAR FOR THE JANUARY 8  
MEETING!



Speaker: Dr. Donald A. Dahlstrom  
V.P. of National AIChE  
V.P. and Director of R & D  
The Eimco Corporation

Subject: International Relations - A New Dimension  
for Chemical Engineers and AIChE

EVERY MEMBER A MISSIONARY

As chemical engineers we assume the responsibilities of practicing our profession and furthering its development. We all practice our profession -- but how many of us spend time furthering the professional development of chemical engineering? Shouldn't we all meet this responsibility, too? The rewards aren't directly monetary; they are even more valuable. The rewards are a stable profession with capable members.

A profession can become obsolete. The first sign of obsolescence is lack of growth. Lack of growth is apparent in college enrollment today. Think back -- why did you take chemical engineering? Did a member of AIChE tell you what chemical engineering was about? Probably not! You chose it because chemistry and science appealed to you, or because chemical engineering was emphasized as the engineering profession with great potential. What would your decision be today with all the emphasis on space, atomic energy and computers? Chemistry or chemical engineering is rarely mentioned with these terms even though they are intimately connected with each.

We must get to the prospective chemical engineering student and tell him about chemical engineering and its potential as a profession. Each member must be a missionary for chemical engineering. The Vocational Guidance Committee needs your help. We hope to contact many high schools and offer our services as speakers to career days, science clubs, etc., so that we can bring chemical engineering to the student. You can be of service by either joining the committee, or offering to speak at two or three high schools. You would be meeting your responsibility of furthering the development of your profession.

- ( ) I would like to join the Vocational Guidance Committee  
( ) I would like to speak on chemical engineering to students

Name \_\_\_\_\_

Home Address \_\_\_\_\_ Phone \_\_\_\_\_

Bus. Address \_\_\_\_\_ Phone \_\_\_\_\_

Send to N. E. Rawson, The Pure Oil Research Center, Crystal Lake, Ill.

P E R

ABBOTT

G. A  
Pilo

D. A  
Area  
a st

Rudy  
Depa  
Dama

AMERIC

New  
sity

E. M  
Chap  
NMR

G. C  
Asso  
matio  
poli

"Com  
Rein  
ation

ARMOUR

Mr. R  
join

CHEMICA

Georg



## PERSONAL NEWS :

### ABBOTT LABORATORIES

G. A. Bauer was recently promoted to Section Manager, Chemical Pilot Plant.

D. A. Honken, formerly Supervisor in the Chemical Manufacturing Area, has transferred to the Fermentation Manufacturing Area as a staff engineer.

Rudy Sundberg has transferred from the Engineering Development Department to the Antibiotics Isolation Department. George Damasius is now a member of the Engineering Department.

### AMERICAN OIL COMPANY

New members of the staff and Samuel Meghir, Ph.D., McGill University and Ahmad Sam, Ph.D., Duke University.

E. M. Banas addressed the first meeting, St. Procopius College Chapter of ACS. His topic was "Applications of High Resolution NMR To Some Hydroaromatic Hydrocarbons."

G. C. McKeague presented a paper before the Old Dominion Purchasing Association, which met at Roanoke, Virginia. He described mathematical techniques that aid in formulating economical purchasing policy.

"Computer Control of Ultraforming", a paper by A. B. Groh and R. C. Reineman, was presented to the National Petroleum Refiners Association at Pittsburgh, Pennsylvania, by R. Groh.

### ARMOUR & COMPANY

Mr. Fred Becker, Jr., formerly with the Visking Corporation, has joined the Armour Grocery Products Company as a Project Engineer.

### CHEMICAL PROCESS MAGAZINE

George Bangs is the proud father of a baby girl, Lisa born Sept. 30.

Ted Meinhold recently returned from an editorial trip down South. Other recent travelers were Dana Berg who spent a week in the Pittsburgh and Cleveland areas, and Gordon Weyermuller who attended a plant dedication in Liberal, Kansas, and made editorial calls in Erie, Pennsylvania.

#### CORN PRODUCTS COMPANY

New additions to the Central Engineering Department are Vincent P. Chwalik, formerly a sales engineer with Dorr Oliver and Jerry R. Kostka, a research engineer from General American Transportation Corporation.

#### THE EIMCO CORPORATION

Don Dahlstrom spoke at the Idaho Falls and Columbia, Wash. sections as well as the student chapter at IIT during November.

#### ILLINOIS INSTITUTE OF TECHNOLOGY, Dept. of Chemical Engineering

New staff members are Kwang-Chu Chao (Ph.D., Wisconsin), associate professor from California Research; Herbert Weinstein (Ph.D., Case), assistant professor, from NASA; Thomas Fitzgerald (M.S., IIT), instructor.

#### NORTHWESTERN UNIVERSITY, Chemical Engineering Dept.

New faculty members are: Professor Joshua S. Dranoff, returning after a year as associate professor of Chemical Engineering at Columbia University; Professor William W. Graessley, coming from the Air Reduction Company at Murray Hills, N.J.; Professor Hugh M. Hulburt, who will combine research in turbulence, chemical reaction kinetics and applied mathematics with his teaching duties. He was formerly director of Physical Research at the American Cyanamid Company, Stamford, Conn.

#### TEXACO, INC.

Mr. W. M. Nueman was transferred from chief process engineer at Texaco's Lawrenceville, Illinois refinery to supervisor of chemical operations at Texaco's Lockport refinery.

Mr. R  
Texaco  
Texaco

#### UNION CAR

Mr. L  
Depart

#### VICTOR CH

Addit  
'51 P  
Unive

Georg  
Divis

Leo P  
has b

Lou K  
July

Recen  
(repo  
June

#### VISKING

John  
to th  
Iowa.

Leon  
home

Mr. R. R. Dickinson, project engineer, has been transferred from Texaco's Houston Process Department to the Process Department at Texaco's Lockport refinery.

#### UNION CARBIDE COMPANY

Mr. L. D. Wheaton was transferred to the Olefins Engineering Department in South Charleston, West Virginia.

#### VICTOR CHEMICAL WORKS

Additions to the staff are Beuford Bunnell, chem. eng. graduate '51 Purdue University; Louis Bolzan, chem. eng. graduate '57, University of Illinois; Herb Levin, chem. eng. graduate '63, IIT.

George Klein became assistant vice president of Research, Victor Division of Stauffer Chemical Co., with offices in New York.

Leo Post is the new manager of Process Development; Ronald Dilks has become a process engineer at Waterway in Chicago.

Lou Kline and Harold Sorstokke became fathers of baby boys on July 28 and May 3, 1963, respectively.

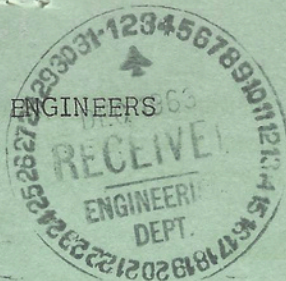
Recent and not-so-recent marriages: Jim Dyer on June 24, 1962 (reporter failed to report this last year), Beuford Bunnell on June 15, 1963 and Herb Levin on July 2, 1963.

#### VISKING CORPORATION

John Durkin, Richard Narta and Tom Bayles were recently transferred to the Visking Division plant now under construction at Centerville, Iowa.

Leon Haring has joined the ranks of happy home owners. Leon's new home is in Naperville.

AMERICAN INSTITUTE OF CHEMICAL ENGINEERS  
Chicago Section  
A. A. Winkler  
Corn Products Co.  
Moffett Technical Center  
Box 345  
Argo, Illinois



NON PROFIT ORG.  
U. S. Postage  
PAID  
Chicago, Ill.  
Permit No.2842

Return  
Requested

**Mr. Edwin H. Moczek**  
**Abbott Laboratories**  
**North Chicago, Ill.**

AIChE

EDITORIAL BOARD

T. F. Meinhold  
E. H. Moczek  
H. C. Thorne, Jr.

PERSONAL NEWS EDITOR

B. L. Johnson  
American Oil Company  
910 S. Michigan Ave.  
Chicago, Illinois

BOARD OF DIRECTORS  
SECTION OFFICERS, 1963-64

Chairman  
Vice Chairman  
Secretary  
Treasurer

L. O. Stine  
H. C. Thorne, Jr.  
W. T. Sullivan  
W. T. Brazelton

Universal Oil Products  
American Oil Company  
Abbott Laboratories  
Northwestern University

COMMITTEE CHAIRMEN

Constitution  
Finance  
House  
Membership  
Program  
Publicity  
Vocational

J. Hinman  
D. Berg  
G. Ziegenhorn  
A. A. Winkler  
A. G. Lickus  
E. H. Moczek  
N. Rawson

American Oil Company  
Chemical Processing  
Podbielniak, Inc.  
Corn Products  
Universal Oil Products  
Abbott Laboratories  
Pure Oil Company

OTHER DIRECTORS

Director-at-Large  
Director-at-Large  
Director-at-Large  
Council Liaison  
Symposium Chairman

W. E. Watkins  
T. F. Meinhold  
R. F. Opila  
D. A. Dahlstrom  
J. C. Forman

Duriron Company  
Chemical Processing  
Corn Products  
Eimco Corporation  
Abbott Laboratories

**(PLEASE FILL IN THIS CARD AND MAIL. NO STAMP NECESSARY)**

I plan to attend this month's meeting.

Please make \_\_\_\_\_ dinner reservations for me and for the following guests.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Signed \_\_\_\_\_

No  
Postage Stamp  
Necessary  
If Mailed in the  
United States

**B U S I N E S S   R E P L Y   C A R D**  
First Class Permit No. 81      Whiting, Indiana

**POSTAGE WILL BE PAID BY**

**CHICAGO SECTION —**

**The American Institute of Chemical Engineers**

**GEORGE J. ZIEGENBORN**

**PODBIELNIAK, INC.**

**3201 N. WOLF ROAD**

**FRANKLIN PARK, ILLINOIS**

