

# Commencement

CALIFORNIA INSTITUTE OF TECHNOLOGY

PASADENA

June 9, 1933, 4:30 o'clock



PROCESSIONAL MARCH—

“Pomp and Chivalry” - - - - - *Charles J. Robert*  
The Institute Band

## Invocation

HYMN—“America” - - - - - *Smith*

## Chaplain's Address

THE REVEREND ROBERT FREEMAN, D.D., Litt.D.

SONG—“Roadways” - - - - - *Paul Eisler*  
The Institute Glee Club

## Address

“INVENTIONS AND THEIR SOCIAL EFFECTS”  
WILLIAM FIELDING OGBURN, PH.D.”

## Presentation of Candidates for Degrees

DEAN FREDERIC W. HINRICHS, JR., M.A.  
Dean of Upper Classmen

WILLIAM RALPH SMYTHE, PH.D.  
Chairman of Committee on Course in Science

ROBERT L. DAUGHERTY, M.E.  
For the Chairman of Committee on Course in Engineering

RICHARD CHASE TOLMAN, PH.D.  
Chairman of Committee on Graduate Courses

## Conferring of Degrees

on behalf of the Trustees and Faculty

ROBERT A. MILLIKAN, PH.D., LL.D., Sc.D.  
Chairman of the Executive Council

SONG—“Hail C. I. T.” - - - - - *Barnes*

## Benediction

POSTLUDE—“The Little Giant March” - - - - - *Moon*

(The audience will stand during the entry of the Academic Procession, the Invocation, and the singing of “America” and “Hail C. I. T.”)

# Candidates for Degrees

## Doctor of Philosophy

RAYMOND WELLINGTON AGER, B.S., California Institute of Technology.  
ALFRED BERNARD C. ANDERSON, A.B., University of California at Los Angeles.  
GEORGE HAROLD ANDERSON, A.B. and A.M., Stanford University.  
ROBERT C. BARTON, B.S. and M.S., Carnegie Institute of Technology.  
STERLING BECKWITH, A.B., Stanford University; M.S., University of Pittsburgh.  
JAMES LAWRENCE BOTSFORD, B.A., University of Washington.  
LAWRENCE OLIN BROCKWAY, B.S. and M.S., University of Nebraska.  
ALFRED HOBLITZELLE CLIFFORD, A.B., Yale University.  
EVERETT FRANKLIN COX, A.B., Miami University.  
EVERETT CARLYLE EDWARDS, A.B. and A.M., University of Wisconsin.  
RENE ENGEL, B.S. and M.S., University of Paris.  
CHARLES EDWARD HABLUTZEL, JR., A.B. and A.M., Stanford University.  
GEORGE THOMAS HARNESS, B.S., California Institute of Technology.  
MAURICE FRED HASLER, B.S. and M.S., California Institute of Technology.  
GERALD L. HASSLER, B.A. and M.S., Washington University.  
RALPH RAYMOND HULTGREN, B.S., University of California, M.S., University of Utah.  
ARNOLD MARTIN KUETHE, Ph.B., Ripon College.  
CHARLTON MINER LEWIS, B.A., Yale University.  
WILLIAM BRADLEY LEWIS, B.A., Williams College, M.S., California Institute of Technology.  
JOHN MCMORRIS, A.B., College of Emporia.  
GEORGE CLARKSON MUNRO, A.B., University of California at Los Angeles.  
DWIGHT OLCOTT NORTH, B.S., Wesleyan University.  
JOHN GIBSON PLEASANTS, B.S., University of Southern California; M.S., California Institute of Technology.  
ROBERT SELDEN ROSE, A.B., Harvard University.  
HERMAN FRANZ SCHOTT, B.S., California Institute of Technology.  
MAPLE DELOS SHAPPELL, B.S., University of Arizona.  
SELY MILLMORE SKINNER, B.S., University of Washington.  
DANIEL DWIGHT TAYLOR, A.B., Colorado College.  
GEORGE FREDERIC TAYLOR, B.S., and M.S., California Institute of Technology.  
JOSEPH WINCHESTER URMSTER, B.A., University of California at Los Angeles; M.S., California Institute of Technology.  
FRANK LESLIE WATTENDORF, B.A., Harvard University; M.S., Massachusetts Institute of Technology.  
SIDNEY WEINBAUM, B.S., California Institute of Technology.  
DAVID HAROLD WEINSTEIN, A.B., University of California.  
EDGAR BRIGHT WILSON, JR., B.S. and M.A., Princeton University.  
ALEXANDER WOLF, B.S., University of Pennsylvania.  
CARLETON RUSSELL WORTH, A.B., Southwest Missouri Teachers College; S.M., University of Chicago.

## Master of Science in Science

### PHYSICS

✓ EDWARD DAY ALCOCK, A.B., University of California at Los Angeles.  
✓ ROBERT COMBS KENDALL, B.A., De Pauw University.  
WILLIAM HAYWARD PICKERING, B.S., California Institute of Technology.  
JOHN TOWNSEND SINNETTE, JR., B.S., California Institute of Technology.  
CARL LESLIE THIELE, B.S., California Institute of Technology.

### ASTROPHYSICS

BRIAN ORVILLE SPARKS, B.S., California Institute of Technology.

### CHEMISTRY

✓ ERNEST HERBERT LYONS, JR., B.S., Massachusetts Institute of Technology.  
✓ ARTHUR NICHOLS PRATER, A.B., University of California at Los Angeles.  
CHESTER EUGENE WILSON, B.S., California Institute of Technology.

### CHEMICAL ENGINEERING

CHARLES EDMUND KIRCHER, JR., B.S., California Institute of Technology.

### GEOLOGY AND PALEONTOLOGY

FRANK WAGNER BELL, B.S., California Institute of Technology.  
WILLIAM MAURICE COGEN, B.S., California Institute of Technology.  
✓ MAURICE GHIRARR DONNELLY, E.M., Colorado School of Mines.  
✓ DAVID BARNARD ERICSON, B.S., Massachusetts Institute of Technology.  
ELBERT NELSON HARSHMAN, B.S., California Institute of Technology.  
BENJAMIN HOLZMAN, B.S., California Institute of Technology.  
✓ LOUIS EMMETT KEMNITZER, A.B., Stanford University.  
✓ WILLIS PARKISON POPENOE, B.S., George Washington University.

### METEOROLOGY

✓ IRVING PARKHURST KRICK, A.B., University of California.

# Master of Science in Engineering

## ELECTRICAL ENGINEERING

- ✓ LINDSAY MORITZ APPLIGATE, B.S., University of Washington.
- ALBERT WILLIAM ATWOOD, JR., B.S., California Institute of Technology.
- WILLIAM LADHU BERRY, B.S., California Institute of Technology.
- FREDERICK WILLIAM BOWDEN, B.S., California Institute of Technology.
- ✓ WILLIAM MORRIS EVANS, B.S., University of Southern California.
- RAYMOND HOWARD GRIEST, B.S., California Institute of Technology.
- ✓ PAUL FREDERICK HAWLEY, B.S., University of Arizona.
- MILLS SCHUYLER HODGE, B.S., California Institute of Technology.
- SAMUEL ERIC HOWSE, B.S., California Institute of Technology.
- ✓ CHUEN CHANG HSU, B.S., Georgia School of Technology.
- ✓ WILLIAM LAWRENCE NEWMAYER, JR., B.S., Case School of Applied Science.
- ✓ WILLIAM MORLEY PICKLES, JR., B.S., School of Mines and Metallurgy, Missouri.
- ✓ ARTHUR HERMAN SCHLECHTER, B.S., University of Oklahoma.
- HYMAN ZALMON SOLOMON, California Institute of Technology.
- ✓ ROBERT LESLIE SUGGS, B.S., Agricultural and Mechanical College of Texas.
- RUBIN WIDESS, B.S., California Institute of Technology.

## MECHANICAL ENGINEERING

- ✓ AMMON S. ANDES, B.S., Montana State College.
- THOMAS WILLIAM BELL, B.S., California Institute of Technology.
- ✓ RAYMOND CHARLES BINDER, B.S., Massachusetts Institute of Technology.
- ✓ MILTON EUGENE CZAMANSKE, M.E., Marquette University.
- ✓ EDWIN NATHAN DAVIS, B.S., University of Wyoming.
- ROBERT BRAMAN FREEMAN, B.S., California Institute of Technology.
- BENARTHUR CASTLE HAYNES, B.S., California Institute of Technology.
- ✓ KANAME KITUSDA, B.S., Tri-State College.
- ✓ CLARENCE R. DE LAUBENFELS, B.S., (ME); B.S. (EE), Iowa State College.
- ✓ JOHN LESLEY MAGDEN, B.S., University of California.
- ✓ EDWIN BARTHOLMEW MICHAL, B.S., University of Nevada.
- ✓ KEITH MURDOCK, B.S., University of Utah.
- ✓ LEONARD EUGENE ROOT, B.A., College of the Pacific.
- KENNETH HAYES SWART, B.S., California Institute of Technology.

## CIVIL ENGINEERING

- ✓ FRED BERKELEY BOWMAN, B.S., The State College of Washington.
- CLIFFORD COMER CAWLEY, B. S., California Institute of Technology.
- ✓ ALBERT ARTHUR KOCH, B.S., Armour Institute of Technology.
- ✓ WILLIAM ARTHUR LARSEN, B.S., University of Utah.
- ✓ HARALD OMSTED, Graduate of Norway Institute of Technology.
- WORRELL FRANZONI PRUDEN, B.S., California Institute of Technology.
- HAROLD ROACH, B.S., California Institute of Technology.
- JOSEPH SHEFFET, B.S., California Institute of Technology.
- HOWARD GARDNER SMITS, B.S., California Institute of Technology.
- ✓ DAVID YUE-KWONG WONG, B.A., University of Redlands; B.S., California Institute of Technology.

## AERONAUTICAL ENGINEERING

- PAUL HANES KEMMER, Graduate U. S. Army Air Corps Engineering School.

# Bachelor of Science Science

\*HARRISON STOUT BACKUS  
DAVID FULMER BENDER  
YGNACIO BONILLAS  
\*EUGENE MITTELL BRUNNER  
LEE THURSTON CARLETON  
RAYMOND AVOLON CROMLEY  
RUSSELL NIMTZ DOESCHER  
NATHAN EISEN  
VICTOR ELCONIN  
ELMER SHERWOOD FRANKLIN  
\*RUBIN HAROLD FRIEMAN  
GREGORY KEMENYI HARTMAN  
FRANCIS ROBERT HUNTER  
KEDRIC VINCENT KEELEY  
E. RUSSELL KENNEDY

DELMAR HERMAN LARSEN  
\*L. JACKSON LASLETT  
WYATT HUNTER LEWIS  
DOUGLAS GEORGE MARLOW  
\*WILLIAM A. MERSMAN  
HUNTER NICHOLSON, JR.  
EARL MORTIMER OLDS  
DONALD KEITH OLSON  
CHARLES DILLON PERRINE, JR.  
DONALD FREDERICK POULSON  
CHRISTIAN HENRY PRIOR  
HYMAN ZALMON SOLOMON  
WILLIAM ELLIS STONE  
HENRY BRUNO SUHR  
ARNOLD PHILIP WILKING

\* With honors.

## Bachelor of Science Engineering

WILLARD ANDREW ASHTON  
JOHN KIMBALL AYERS  
SIDNEY FRANCIS BAMBERGER  
EARL EDGAR BARNETT  
GEORGE MERRILL BERKELEY  
EVAN GEORGE BOWER  
\*RALPH EDWARD BYRNE, JR.  
DAVID LEWIS CLARK, JR.  
PHILLIP HENRY CRAIG  
EDGAR GRENFELLE CRAWFORD  
RAY HAYWARD CRIPPS  
BRUCE M. DACK  
TRENT RAYSBROOK DAMES  
MADISON THENTON DAVIS, III.  
JOSEPH DEMILITA  
FREDERICK HENRY DETMERS  
PHILLIP CHARLES EFROMSON  
KENNETH STUART FITCH  
ROBERT DAWSON FLETCHER  
LOUIS HAROLD GOSS  
LAURENCE KEENEY GOULD  
ROBERT BROWN GROSSMAN  
EDWARD A. HAYES  
ROBERT GEORGE HERLIN  
JAMES WARREN HILL  
OLIVER DIMMITT HOFMANN  
ROBERT CHARLES HOGAN  
JAMES STANLEY JOHNSON  
SAMUEL YORKS JOHNSON  
ARTHUR EDWARD LAMEL  
ALEXANDER FELLER LIBBY  
\*ERNEST RAY LOCKHART  
ROBERT GEORGE MACDONALD  
ARTHUR ADELBERT MATHEWSON, JR.  
EDWARD JEAN MATSON  
WALTER LYDE MCCLEERY, JR.  
ROBERT RUFUS MEAD  
\*JOHN DALE MENDENHALL  
JOHN EDWARD MESKELL  
THEODORE SAMUEL MITCHELL  
JOHN CHESTER MONNING, JR.  
WILLIAM WALLACE MOORE  
WENDELL ALTON MORGAN  
BERNHARD NELSON PALM  
DURWARD HARRY PALMER  
WILLIAM CHARLES PAULY  
GEORGE HENRY PICKETT  
\*JOHN ROBINSON PIERCE  
\*LOUIS ALBERT PIPES  
DICK AUGUST PLANK  
WINSTON RANDOLPH RICE  
WILLARD CLEMENT ROBINETTE  
RICHARD LORD RUSSELL  
DEAN FREDERICK SAURENMAN  
WALTER SCHOLTZ  
GROVER MARION SECORD  
NIKOLAI NIKOLAEVICH SKAREDOFF  
ROBERT LESLIE SMALLMAN  
ALVIN JOSEPH SMITH  
WARREN HOWARD SMITH  
JAMES CLIFTON SPADE  
JACK NORMAN SPARLING  
CHARLES BRYSON SPICER  
FERDINAND EDWARD STRAUSS  
THOMAS STARR TERRILL  
\*CHARLES EMIL TILLMAN  
JOHN SPENCER WARFEL  
WILLIAM THORNTON WHEELER  
\*MOSES BARAK WIDESS

\* With honors.

## America

My country! 'tis of thee,  
Sweet land of liberty,  
Of thee I sing;  
Land where my fathers died,  
Land of the Pilgrim's pride  
From every mountain side  
Let freedom ring.

Our father's God to Thee,  
Author of Liberty,  
To Thee we sing:  
Long may our land be bright  
With Freedom's holy light;  
Protect us by Thy might,  
Great God our King.

—S. F. Smith.

## Hail C. I. T.

In Southern California with grace and splendor bound—  
Where the lofty mountain peaks look out to lands beyond,  
Proudly stands our Alma Mater, glorious to see.  
We raise our voices hailing, hailing, hailing thee:  
Echoes ringing while we're singing over land and sea;  
The halls of fame resound thy name, noble C. I. T.

—Manton M. Barnes, '21