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Catalog of Research Reports, Papers, Bulletins and Theses

For the period July 1, 1969 through June 30, 1971

COLLEGE OF ENGINEERING, COLORADO STATE UNIVERSITY
FORT COLLINS, COLORADO

July 1, 1971

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COLLEGE OF ENGINEERING
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Fred W. Smith, Acting Head, Department of Mechanical Engineering, 1971 - present

INTRODUCTION

This catalog presents a list of Colorado State University publications prepared by the faculty, research staff and students of the College of Engineering. Included are publications of U. S. Government staff affiliated with the College of Engineering.

A listing of publications prior to 1969 may be found in previous catalogs, "Research Reports, Papers, Bulletins and Theses," Civil Engineering Numbers CER63RAS71, CER65DKS52, and CER68-69DBS40.

A supplement to this catalog will be issued every two years.

The publications by members of various departments are listed alphabetically by senior author. Papers coauthored by members of different departments

in the College of Engineering are cross-referenced with appropriate notes.

Theses and dissertations may be obtained on an interlibrary loan by writing to the Director of Libraries, Colorado State University.

Copies of publications, when available, may be obtained for a nominal charge. See notation at end of each departmental listing as to whom to address communication when requesting copies. Papers and reports out of print may be duplicated at a cost of 10¢ per page. Include postage: \$0.25 domestic, and \$1.00 foreign.

ABBREVIATIONS USED IN THIS CATALOG

AAS/AIAA	American Automotive Society/American Institute of Aeronautics and Astronautics
AEC	Atomic Energy Commission
AGARD	Advisory Group for Aerospace Research and Development
AIAA	American Institute of Aeronautics and Astronautics
AICHE-SPE	American Institute of Chemical Engineers - Society of Petroleum Engineers
AMS	American Meteorological Society
AMS/WMO	American Meteorological Society/World Meteorological Association
Arch. Met. Geophys. Biokl.	Archiv für Meteorologie Geophysik und Bioklimatologie
ARS	Agricultural Research Service
ARS/SCS	Agricultural Research Service/Soil Conservation Service
ASAE	American Society of Architectural Engineers
ASCE	American Society of Civil Engineers
ASME	American Society of Mechanical Engineers
ATDL	Atmospheric Turbulence and Diffusion Laboratory
ATS	Applications Technology Satellite
CAT	Clear-Air Turbulence
CO-TIE	Cooperation Via Televised Instruction in Education
C.P.I.A.	Chemical Propulsion Information Agency
CSU	Colorado State University
CUSUSWASH	Council of United States Universities for Soil and Water Development in Arid and Sub-Humid Areas
ECOM	United States Army Electronics Command
ERM	Engineering Research Magazine
ESSA	Environmental Sciences Services Administration
IAHR	International Association for Hydraulic Research
IASH	International Association of Scientific Hydrology
IBP	International Biological Program
ICID	International Commission on Irrigation and Drainage
IEE	Institute of Electrical Engineers
IEEE	Institute of Electrical and Electronics Engineers
IFAC	International Federation of Automatic Control
ISA	Instrument Society of America
JANNAF	Joint Army - Navy - NASA - Air Force
NASA	National Aeronautics and Space Administration
NATO	North Atlantic Treaty Organization
NAVWEARSCHFAC	Navy Weather Research Facility
NCAR	National Center for Atmospheric Research
NSF	National Science Foundation
ONR	Office of Naval Research
OWRR	Office of Water Resources Research
SIAM	Society for Industrial and Applied Mathematics
UAG	University of Alaska Geophysics Institute
UES	Undergraduate Education and Science
UMSCHAU	German Magazine similar to SCIENCE
USAEC	United States Atomic Energy Commission
USDA	United States Department of Agriculture
USGS	United States Geological Survey
WMO	World Meteorological Association
WMO/IUGG	World Meteorological Association/International Union of Geodesy and Geophysics

ACADEMIC AND RESEARCH FACULTY
DEPARTMENT OF AGRICULTURAL ENGINEERING

Judson M. Harper, Head

1969-71

Addink, J. W., Research Associate: (irrigation and drainage).	McWhorter, D. B., Assistant Professor: (soil and water).
Corey, A. T., Professor: (flow through porous media).	Miles, D. L., Assistant Professor and Extension Irrigation Engineer: (irrigation).
Evans, N. A., Professor: (irrigation and drainage).	Skogerboe, G. V., Assistant Professor: (irrigation and drainage).
Hansen, R. W., Associate Professor and Extension Agricultural Engineer: (farm structures and power machinery).	Smith, J. L., Associate Professor: (power and machinery).
Harper, J. M., Professor and Head of Department: (food engineering).	Story, A. G., Assistant Professor: (power and machinery).
Hart, W. E., Associate Professor: (irrigation and drainage).	Walker, W. R., Research Associate: (irrigation and drainage).
Howe, O. W., Research Associate: (irrigation and drainage).	Ward, R. C., Assistant Professor: (systems analysis).

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ACADEMIC AND RESEARCH FACULTY

DEPARTMENT OF CIVIL ENGINEERING

J. W. N. FEAD, Head

1969-71

Albertson, M. L., Professor: (hydraulics, fluid mechanics, water resources).	Longenbaugh, R. A., Assistant Professor: (ground water, hydrology).
Baldwin, L. V., Professor and Dean, College of Engineering: (fluid mechanics, thermosciences).	Mercer, Albert G., Associate Professor: (hydraulics).
Barnes, A. H., Associate Professor: (hydrology, hydraulics).	Meroney, R. N., Associate Professor: (fluid dynamics).
Bell, J. M., Associate Professor: (soil mechanics).	Morel-Seytoux, Hubert J., Associate Professor: (hydrology, mechanics).
Bender, M. E., Professor and President, Asian Institute of Technology: (highways, engineering economics).	Nickerson, Everett C., Assistant Professor: (fluid mechanics, meteorology).
Bidwell, V. J., Research Associate: (hydrology, water resources).	Nielson, F. D., Associate Professor: (soil mechanics).
Bole, J. B., Assistant Professor: (coastal engineering hydraulics, fluid mechanics).	Osteryoung, Janet G., Assistant Professor: (environmental engineering).
Breitenbach, E. Allen, Faculty Affiliate.	Peterka, J. O., Assistant Professor: (fluid mechanics).
Brewer, Jocelyn, Research Associate: (data processing).	Richardson, Everett V., Professor: (hydraulics, hydrology).
Cermak, J. E., Professor: (fluid mechanics, mechanics, hydraulics).	Ruff, J. F., Assistant Professor: (hydraulics, hydrodynamics, remote sensing).
Chamberlain, A. R., President of CSU and Professor: (fluid mechanics).	Sadeh, Willy Z., Assistant Professor: (fluid mechanics).
Criswell, M. E., Assistant Professor: (structures, mechanics).	Sandborn, V. A., Professor: (fluid mechanics, aerodynamics).
Fead, J. W. N., Professor and Head of Department of Civil Engineering: (structures, soil mechanics).	Schulz, E. F., Associate Professor: (hydrology).
Garrison, James A., Assistant Civil Engineer: (fluid dynamics).	Schweizer, H. H., Professor: (mechanics, structures).
Gessler, Johannes, Assistant Professor: (fluid mechanics, hydraulics).	Shen, H. W., Professor: (fluid mechanics, hydraulics).
Glover, R. E., Faculty Affiliate.	Simons, D. B., Professor and Associate Dean for Research: (hydraulics, fluid mechanics, water resources).
Goodman, J. R., Associate Professor: (structures, mechanics).	Skinner, M. M., Assistant Professor: (hydraulics, river systems environment, remote sensing).
Hansen, W. W., Assistant Professor: (water resource systems, hydraulics).	Smith, G. L., Associate Professor: (hydraulics, fluid mechanics, hydrology).
Hayman, R. W., Associate Professor: (highways, soil mechanics, photogrammetry).	Sunada, D. K., Associate Professor: (ground water).
Hendricks, D. W., Associate Professor: (environmental engineering).	Thomas, Charles W., Professor: (water resources, hydrology, hydraulics).
Karaki, S., Professor: (fluid mechanics, hydraulics).	Thompson, Erik G., Assistant Professor: (soil mechanics).
Koloseus, H. J., Professor: (hydraulics, fluid mechanics).	Todorovic, Petar, Associate Professor: (hydrology).
Löf, George O. G., Professor: (fluid mechanics, hydraulics, sanitary engineering).	Tucker, L. S., Research Associate: (water resource systems, urban water resources).
	Tullis, J. Paul, Assistant Professor: (hydraulics, fluid mechanics).

(Academic and Research Faculty for Department of Civil Engineering is continued on next page.)

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Vanderbilt, M. D., Associate Professor: (structures, mechanics).

Yevjevich, V., Professor: (hydrology, hydraulics, water resources).

Ward, J. C., Professor: (environmental engineering).

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1. H. W. Shen, Department of Civil Engineering.
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1. F. H. Chaudhry, Department of Civil Engineering, (4 coauthorships).
 2. H. Chuang, Department of Civil Engineering, (2 coauthorships).
 3. J. A. Garrison, Department of Civil Engineering.
 4. G. Hsi, Department of Civil Engineering.
 5. S. Kawamura, Department of Civil Engineering, (3 coauthorships).
 6. T. Kawatani, Department of Civil Engineering.
 7. D. M. Kesic, Department of Civil Engineering.
 8. K. Kitabayashi, Department of Civil Engineering.
 9. R. J. Kung, Department of Civil Engineering.
 10. Jung-Tai Lin, Department of Civil Engineering, (2 coauthorships).
 11. R. N. Meroney, Department of Civil Engineering.
 12. K. D. Nambudripad, Department of Civil Engineering.
 13. M. M. Orgill, Department of Civil Engineering, (3 coauthorships).
 14. W. Z. Sadeh, Department of Civil Engineering, (3 coauthorships).
 15. S. B. Verma, Department of Civil Engineering.
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R. J. Churchill, Head

1969-71

Allen, J. L., Associate Professor: (electromagnetic fields and magnetic materials).	Graupe, D., Associate Professor: (control systems and bioengineering).
Alspach, D. L., Assistant Professor: (stochastic processes and space systems).	Jones, T. B., Assistant Professor: (fields and plasmas).
Aus, H. M., Assistant Professor: (computer systems).	Lindon, P. H., Associate Professor: (circuits, energy conversion and power systems).
Britton, C. C., Associate Professor: (electromechanical instrumentation).	Lord, W., Associate Professor: (computer managed learning and magnetic devices).
Brubaker, T. A., Associate Professor: (computer systems).	Maxwell, L. M., Professor: (network and graph theory).
Budak, A., Associate Professor: (active network theory).	Morgan, R. J., Assistant Professor: (bioengineering and systems).
Chan, P. W., Assistant Professor: (laser plasma diagnostics).	Rybak, J. P., Post Doctoral Fellow: (plasma diagnostics and space communication).
Chinburg, C. H., Associate Professor: (circuits, electrical machinery and power systems).	Scharf, L. L., Assistant Professor: (control and Communication systems).
Churchill, R. J., Professor and Head of Department: (gaseous electronics and plasma diagnostics).	Smith, F. L., III, Assistant Professor: (ionospheric physics and electronics).
Dean, J. E., Professor: (radio communications, microwaves and power systems).	Vickers, R. S., Associate Professor: (electro-optical systems and remote sensing).
Edwards, D. F., Professor: (quantum electronics and solid state physics).	Wilmsen, C. W., Associate Professor: (solid-state materials and thin-film devices).

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2. R. J. Churchill, Department of Electrical Engineering, (2 coauthorships).
3. R. W. Hayman, Department of Civil Engineering.
4. L. M. Maxwell, Department of Electrical Engineering, (5 coauthorships).
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2. R. J. Churchill, Department of Electrical Engineering.
3. Lawrence E. Colip, Department of Electrical Engineering.
4. D. R. Kalleisen, Department of Electrical Engineering, (3 coauthorships).
5. W. Lord, Department of Electrical Engineering, (3 coauthorships).
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2. Loyd F. Nelson, Department of Electrical Engineering.
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ACADEMIC AND RESEARCH FACULTY

DEPARTMENT OF MECHANICAL ENGINEERING

Knox Millsaps, Head, 1969-71
Fred W. Smith, Acting Head, 1971 - present

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|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Childs, D. W., Assistant Professor: (Mechanics and controls). | Olson, H. G., Associate Professor: (Utilization of nuclear energy, reactor theory, cavitation). |
| Dye, J. E., Assistant Professor: (Physics, atmospheric sciences). | Rennat, H. O., Associate Professor: (Thermodynamics, materials, relation between properties and microstructure). |
| Edwards, H. W., Associate Professor: (Surface chemistry, heterogeneous nucleation, electrostatic precipitator performance, atomic absorption spectroscopy). | Smith, F. W., Associate Professor: (Elasticity, thermoelasticity, fracture mechanics, dynamics and systems engineering). |
| Graves, W. A., Assistant Professor: (Thermodynamics, automatic controls, graphics). | Stanfel, L. E., Associate Professor: (Operations research, industrial engineering, mathematical modeling, industrial and mechanical systems). |
| Haberstroh, R. D., Professor: (Heat transfer, convection, two-phase flow, drying of solids, boiling). | Steele, R. L., Professor: (Atmospheric precipitation processes, heterogeneous nucleation). |
| Hardee, A. G., Jr., Assistant Professor: (Thermodynamics, fluid mechanics). | Swan, Henry, Professor: (Cardiovascular research). |
| Histand, M. B., Assistant Professor: (Biomechanics, cardiovascular dynamics). | Thayer, S. B., Associate Professor: (Engineering-economic feasibility, production and inventory control, quality and reliability analysis, industrial development in developing nations). |
| Hooks, L. E., Associate Professor: (Experimental gas dynamics, biomechanics, cardiovascular processes, biological fluid dynamics). | Vander Werff, T. J., Assistant Professor: (Fluid dynamics, biomechanics, cardiovascular processes, biological fluid dynamics). |
| Katz, U., Assistant Professor: (Cloud physics, atmospheric sciences). | Vaughn, M. D., Assistant Professor: (Engineering economy, managerial economy, public finance). |
| Letcher, J. S., Jr., Assistant Professor: (Aeronautics, hydrodynamics, thermodynamics). | Wemple, R. R., Associate Professor: (Biomechanics, cardiovascular processes, biological fluid dynamics). |
| Marschner, B. W., Professor: (Aeronautics and missile aerodynamics, and propulsion). | Wilbur, P. J., Assistant Professor: (Energy conversion, space propulsion systems, nuclear and electric propulsion). |
| Mickelsen, W. R., Professor: (Energy conversion, space propulsion systems, electric propulsion, space mission analysis). | Wilhelm, H. E., Professor: (Self-sustained fission plasmas, magneto-hydrodynamic energy conversion, spectral line broadening, turbulent plasmas, hydroformulation of quantum mechanics). |
| Millsaps, Knox, Professor and Head of Department: (Aerodynamics, applied mathematics and heat transfer). | Winn, C. B., Associate Professor: (Optimal control theory, space mechanics, continental drift). |
| Mitchell, C. E., Associate Professor: (Combustion and shock phenomena). | |

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2. Paul F. Mennemeyer, Department of Mechanical Engineering.

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SOIL AND WATER RESEARCH DIVISION
NORTHERN PLAINS BRANCH

Staff Members
1969-71

C. E. Evans, Chief

Blinco, P. H., Hydraulic Engineer: (sediment Transport, hydraulics).	Kruse, E. G., Agricultural Engineer: (hydraulics, irrigation, drainage).
Duke, H. R., Agricultural Engineer: (drainage, pollution control, irrigation).	Rider, A. R., Research Engineer: LWOP (irrigation).
Haise, Howard R., Soil Scientist and Research Investigation Leader: (irrigation).	Thomas, A. W., Agricultural Engineer: (irrigation).
Heermann, Dale F., Agricultural Engineer: (irrigation, dryland moisture conservation).	Woolhiser, D. A., Hydraulic Engineer: (hydrology, hydraulics, sedimentation).

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 2. H. R. Haise, Agricultural Research Service, (3 coauthorships).
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1. H. Y. Chang, Department of Civil Engineering.
 2. D. F. Kibler, Department of Civil Engineering, (2 coauthorships).
 3. Roger E. Smith, Department of Civil Engineering, (2 coauthorships).

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UNITED STATES GEOLOGICAL SURVEY

STAFF MEMBERS

1969-71

C. F. Nordin, Head

Bennett, J. P., Hydraulic Engineer: (mechanics of flow).	measurement).
Dawdy, D. R., Research Hydrologist: (uncertainties in data).	McQuivey, R. S., Research Hydrologist: (turbulence measurement).
Guy, H. P., Research Hydrologist: (urban hydrology).	Moss, M. E., Hydraulic Engineer: (uncertainties in data).
Jobson, H. E., Hydraulic Engineer: (heat transfer at water surfaces).	Nordin, C. F., Research Hydrologist: (sediment measurement).
Keefer, T. N., Hydraulic Engineer: (turbulence	Rathbun, R. E., Research Hydrologist: (reaeration in open-channel flow).

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1. J. P. Bennett, U. S. Geological Survey.
 2. C. F. Nordin, U. S. Geological Survey.
- Sayre, William W., see Harvey H. Jobson, U. S. Geological Survey, (3 coauthorships).
- Schneider, V. R., see H. W. Shen, Department of Civil Engineering, (2 coauthorships).

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