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## ABSTRACTS

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## ABBREVIATED TITLES USED IN THE ABSTRACTS

Abbreviated Title.	Journal.
A.S.T.M. Bull.	Bulletin of the American Society for Testing Materials.
Aero. Engng Review	Aeronautical Engineering Review.
Aeroplane	Aeroplane.
Airc. Engng	Aircraft Engineering.
Airc. Prod.	Aircraft Production.
Airc. Prod. Analyst.	Aircraft Production Analyst.
Anal. Chem.	Analytical Chemistry.
Ann. des Mines et des Carburants	Annales des Mines et des Carburants.
Ann. Min. Belg.	Annales des Mines de Belgique.
Ann. Min. Roumanie	Annales des Mines de Roumanie.
Ann. Off. Combust. liq.	Annales de l'Office National des Combustibles Liquides.
Amer. Dyestuffs Rept.	American Dyestuffs Reporter.
Asph. u. Teer	Asphalt und Teer.
Auto Engr.	Automobile Engineer
Auto. Tech. Z. (Berlin)	Automobiltechnische Zeitschrift (Berlin).
Azerb. neft. Khoz.	Azerbaidzhanskoe Neftyanoe Khozyaistvo.
Beitr. angew. Geophys.	Beitrage angewandte Geophysik.
Beitr. Geophys.	Beitrage zur Geophysik.
Bitumen	Bitumen.
Bol. del Inst. Sudamericano del Petroleo	Boletin del Instituto Sudamericano del Petroleo.
Bol. Geol. y Min. (Caracas)	Boletin de Geologia y Mineria (Caracas).
Bol. Inform. Petroleras (B.A.)	Boletin de Informaciones Petroleras (Buenos Aires).
Boll. Soc. geol. ital.	Bollettin de la Societa Geologica Italiana.
B.P.	British Patent.
Brit. Med. J.	British Medical Journal.
Brit. Plastics	British Plastics.
Bull. Acad. Sci. (U.S.S.R. Inst. Seismol.)	Bulletin of the Academy of Sciences (U.S.S.R. Institute of Seismology).
Bull. Amer. Ass. Petrol. Geol.	Bulletin of the American Association of Petroleum Geologists.
Bull. Amer. geol. Soc.	Bulletin of the American Geological Society.
Bull. Ass. franç. Tech. Pétrol.	Bulletin de l'Association Française des Techniciens du Pétrole.
Bull. Inst. Min. & Met.	Bulletin of the Institute of Mining and Metallurgy.
Bull. Inst. Min. (metall.) Engrs.	Bulletin of the American Institute of Mining and Metallurgical Engineers.
Bull. Math. Phys. Éc. polyt. Bucharest	Bulletin de Mathematique et de Physique, Bucharest (École-polytechnique).
Bull. roum. geol. Soc.	Bulletin of the Roumanian Geological Society.
Bull. seismol. Soc. Amer.	Bulletin of the Seismological Society of America.
Bull. Soc. des Naturalistes de Moscou	Bulletin de Société des Naturalistes de Moscou.
Bull. Univ. Texas (Bur. econ. Geol. Techn.)	Bulletin of the University of Texas (Bureau of Economic Geology and Technology).
Bur. Stand. J. Res., Wash.	United States Bureau of Standards Journal of Research, Washington.
Calif. Oil World	California Oil World.
Canad. J. Res.	Canadian Journal of Research.
Canad. Min. J.	Canadian Mining Journal.
Canad. Min. metall. Bull.	Bulletin of the Canadian Institute of Mining and Metallurgy.
Chem. & Ind.	Chemistry and Industry.
Chem. Eng. News	Chemical and Engineering News.
Chem. Ind.	Chemical Industries.
Chem. Met. Engng.	Chemical and Metallurgical Engineering.
Chem. Rev.	Chemical Reviews.
Chem. Tr. J.	Chemical Trade Journal.
Chem. Wkblid.	Chemische Weekblad.
Chim. Anal.	Chimie Analytique.
Chim. e Industria	La Chimica e l'Industria.
Chim. et Ind.	Chimie et Industrie.



<i>Abbreviated Title.</i>	<i>Journal.</i>
<i>C.R. Acad. Sci. (Paris)</i>	Comptes Rendus hebdomadaires des Seances de l'Academie des Sciences (Paris).
<i>C.R. (Doklady) Acad. Sci. U.S.S.R.</i>	Comptes Rendus (Doklady) de l'Academie des Sciences U.S.S.R.
<i>C.R. Geol. Pétr. (Strasbourg)</i>	Compte-Rendu des Seances du Groupe des Geologues Pétroliers de Strasbourg.
<i>Diesel Eng. Us. Ass.</i>	Diesel Engine Users Association.
<i>Diesel Pwr. Diesel Transportation</i>	Diesel Power and Diesel Transportation.
<i>Direccion Minas y Geol.</i>	Publication of Direccion Minas y Geologicas (Argentine).
<i>Econ. Geol.</i>	Economic Geology.
<i>Energie</i>	Energie (France).
<i>Engineer</i>	Engineer.
<i>Engineering</i>	Engineering.
<i>Flight</i>	Flight.
<i>Fuel</i>	Fuel in Science and Practice.
<i>Fuel Oil &amp; Oil Heat</i>	Fuel Oil and Oil Heat.
<i>Gas Oil Pwr.</i>	Gas and Oil Power.
<i>Geol. Mag. (Lond.)</i>	Geological Magazine (London).
<i>Geophys.</i>	Geophysics.
<i>Glückauf</i>	Glückauf.
<i>Groz. Neft.</i>	Groznenskii Neftyanik.
<i>Heating Ventilating Engr</i>	Heating and Ventilating Engineer and Journal of Air Conditioning.
<i>India Rubber J.</i>	India Rubber Journal.
<i>India Rubber World</i>	India Rubber World.
<i>Ind. Min. (Argentina)</i>	Industria Minera (Argentina).
<i>Industr. Chem.</i>	Industrial Chemist.
<i>Industr. Engng Chem.</i>	Industrial and Engineering Chemistry.
<i>Industr. Engng Chem. Anal.</i>	Industrial and Engineering Chemistry, Analytical Edition.
<i>Industr. Pwr &amp; Fuel Econ.</i>	Industrial Power and The Fuel Economist.
<i>Ingenieur</i>	De Ingenieur.
<i>Instruments</i>	Instruments.
<i>J. Aero. Sci.</i>	Journal of Aeronautical Sciences.
<i>J. Amer. chem. Soc.</i>	Journal of the American Chemical Society.
<i>J. appl. Chem. (U.S.S.R.)</i>	Journal of Applied Chemistry, U.S.S.R.
<i>J. appl. Mech.</i>	Journal of Applied Mechanics.
<i>J. appl. Phys.</i>	Journal of Applied Physics.
<i>J. chem., metall. min. Soc. S. Africa</i>	Journal of the Chemical, Metallurgical and Mining Society of South Africa.
<i>J. Chem. Phys.</i>	Journal of Chemical Physics.
<i>J. chem. Soc.</i>	Journal of the Chemical Society.
<i>J. Coll. Sci.</i>	Journal of Colloidal Science.
<i>J. Council for Sci. &amp; Ind. Res. (Australia)</i>	Journal of the Council for Scientific and Industrial Research, Australia.
<i>J. Econ. Ent.</i>	Journal of Economic Entomology.
<i>J. Geol.</i>	Journal of Geology.
<i>J. Inst. Fuel</i>	Journal of the Institute of Fuel.
<i>J. Instn. auto. Engrs</i>	Journal of the Institution of Automobile Engineers.
<i>J. Inst. Metals</i>	Journal of the Institute of Metals.
<i>J. Inst. Petrol.</i>	Journal of the Institute of Petroleum.
<i>J. Oil Col. Chem. Assoc.</i>	Journal of the Oil & Colour Chemists.
<i>J. org. Chem.</i>	Journal of Organic Chemistry.
<i>J. Phys. &amp; Colloid Chem.</i>	Journal of Physical and Colloidal Chemistry.
<i>J. phys. Chem.</i>	Journal of Physical Chemistry.
<i>J. R. aero. Soc.</i>	Journal of the Royal Aeronautical Society.
<i>J. Roy. Soc. Arts</i>	Journal of the Royal Society of Arts.
<i>J. sci. Instrum.</i>	Journal of Scientific Instruments.
<i>J. Soc. aut. Engrs</i>	Journal of the Society of Automotive Engineers.
<i>J. Soc. chem. Ind.</i>	Journal of the Society of Chemical Industry.
<i>J. Soc. Dyers Colourists</i>	Journal of the Society of Dyers and Colourists.
<i>J. Western Soc. Engrs</i>	Journal of Western Society of Engineers.
<i>Khim. Tverd. Topliva</i>	Khimiya Tverdovo Topliva.
<i>Matières grasses</i>	Matières Grasses.
<i>Min. &amp; Metall.</i>	Mining and Metallurgy.

<i>Abbreviated Title.</i>	<i>Journal.</i>
<i>Min. Mag. (Lond.)</i>	Mining Magazine (London).
<i>Mod. Plastics</i>	Modern Plastics.
<i>Monit. Pdr. roum.</i>	Moniteur du Pétrole Roumain.
<i>Montan. Rdsch.</i>	Montanistische Rundschau.
<i>Motor Ship</i>	Motor Ship.
<i>N.G.A.A.</i>	Natural Gasoline Association of America.
<i>Nat. Petrol. News</i>	National Petroleum News.
<i>Nat. Petrol. News, Tech. Sect.</i>	National Petroleum News, Technical Section.
<i>Nature</i>	Nature.
<i>Neft. Khoz.</i>	Neftyanoe Khozyaistvo.
<i>Nickel Ind.</i>	Nickel Industry.
<i>Nov. Neft.</i>	Novosti Neftepererabotki.
<i>Nov. Tekhn. Bur.</i>	Novosti Tekhniki Bureniya.
<i>Nov. Tekhn. Neft.</i>	Novosti Tekhniki Neftedobvicki.
<i>Oel u. Kohle</i>	Oel und Kohle vereinigt mit Erdoel und Teer.
<i>Oil Engine &amp; Gas Turbine</i>	Oil Engine and Gas Turbine.
<i>Oil Gas J.</i>	Oil and Gas Journal.
<i>Oil Wkly</i>	Oil Weekly.
<i>Ole, Fette, Wachse</i>	Ole, Fette, Wachse, Seife, Kosmetik.
<i>Olii min.</i>	Olii Minerali.
<i>Paint Mnfr.</i>	Paint Manufacture.
<i>Paint Technol.</i>	Paint Technology.
<i>Petroleum</i>	Petroleum.
<i>Petrol. Engr</i>	Petroleum Engineer.
<i>Petrol. Press Service</i>	Petroleum Press Service.
<i>Petrol Tech. (A.I.M.M.E.)</i>	Petroleum Technology (American Institute of Mining and Metallurgical Engineers).
<i>Petrol. Times</i>	Petroleum Times.
<i>Petrol. World</i>	Petroleum World.
<i>Phil. Mag.</i>	Philosophical Magazine.
<i>Physics</i>	Physics.
<i>Pipe Line News</i>	Pipe Line News.
<i>Proc. Amer. Petrol. Inst.</i>	Proceedings of the American Petroleum Institute.
<i>Proc. Amer. Soc. Test. Mater.</i>	Proceedings of the American Society for Testing Materials.
<i>Proc. Ass. Asph. Pav. Technol.</i>	Proceedings of the Association of Asphalt Paving Technologists.
<i>Proc. Instn mech. Engrs</i>	Proceedings of the Institution of Mechanical Engineers.
<i>Proc. phys. Soc. (Lond.)</i>	Proceedings of the Physical Society (London).
<i>Proc. roy. Soc.</i>	Proceedings of the Royal Society.
<i>Producers' Monthly</i>	Producers' Monthly.
<i>Przeg. Chem.</i>	Przegląd Chemiczny.
<i>Przem. Naft.</i>	Przemysł Naftowy.
<i>Public Roads</i>	Public Roads.
<i>Quart. J. geol. Soc. Lond.</i>	Quarterly Journal of the Geological Society of London.
<i>Rds &amp; Rd Constr.</i>	Roads and Road Construction.
<i>Rds and Streets</i>	Roads and Streets.
<i>Rec. Trav. chim. Pays-Bas</i>	Receuil des Travaux Chimiques des Pays-Bas.
<i>Refiner</i>	Petroleum Refiner.
<i>Rev. Comb. liq.</i>	Revue des Combustibles Liquides.
<i>Rev. Inst. Franç. Petrole</i>	Revue de L'Institut Français du Pétrole et Annales des Combustibles Liquides.
<i>Rev. Mod. Phys.</i>	Review of Modern Physics.
<i>Rev. sci. Instrum.</i>	Review of Scientific Instruments.
<i>Ricerca Scientifica e Ricostruzione.</i>	Ricerca Scientifica e Ricostruzione.
<i>Riv. ital. Petrol.</i>	La Rivista Italiana del Petroleo.
<i>Roy. Engrs J.</i>	Royal Engineers Journal.
<i>S. Afr. Min. (Engng) J.</i>	South African Mining and Engineering Journal.
<i>Soap</i>	Soap.
<i>Strade</i>	Strade.
<i>Sulz. tech. Rev.</i>	Sulzer Technical Review.
<i>Summ. Ops, Calif. Oil Flds</i>	Summary of Operations, Californian Oil Fields.
<i>Tech. Phys. U.S.S.R.</i>	Technical Physics of the U.S.S.R.
<i>Tekn. Tidskr.</i>	Teknisk Tidskrift.
<i>Terr. Magn.</i>	Terrestrial Magnetism.

Abbreviated Title.

Journal.

<i>Times Rev. Ind.</i> . . . . .	Times Review of Industry.
<i>Times Trade &amp; Engr.</i> . . . . .	Times Trade & Engineering Supplement.
<i>Trans. Amer. Inst. Min. &amp; Metall.</i>	Transactions of the American Institute of Mining and Metallurgy.
<i>Trans. Amer. geophys. Un.</i> . . . . .	Transactions of the American Geophysical Union.
<i>Trans. Amer. Inst. chem. Engrs.</i> . . . . .	Transactions of the American Institute of Chemical Engineers.
<i>Trans. Amer. Soc. mech. Engrs.</i> . . . . .	Transactions of the American Society of Mechanical Engineers.
<i>Trans. Faraday Soc.</i> . . . . .	Transactions of the Faraday Society.
<i>Trans. Inst. mar. Engrs</i> . . . . .	Transactions of the Institute of Marine Engineers.
<i>Trans. Instn min. Engrs</i> . . . . .	Transactions of the Institution of Mining Engineers.
<i>U.S. Bur. Mines, Inf. Circ.</i> . . . . .	United States Bureau of Mines, Information Circular.
<i>U.S. Bur. Mines, Rep. Invest.</i> . . . . .	United States Bureau of Mines, Report of Investigations.
<i>U.S. Bur. Mines, Tech. Paper</i> . . . . .	United States Bureau of Mines, Technical Paper.
<i>U.S. Geol. Surv. Bull.</i> . . . . .	United States Geological Survey Bulletin.
<i>U.S.P.</i> . . . . .	United States Patent.
<i>World Oil</i> . . . . .	World Oil.
<i>World Petrol.</i> . . . . .	World Petroleum.
<i>Z. dtsh. geol. Ges.</i> . . . . .	Zeitschrift der Deutschen Geologischen Gesellschaft.
<i>Z. Geophys.</i> . . . . .	Zeitschrift für Geophysik.
<i>Z. prakt. Geol.</i> . . . . .	Zeitschrift zur Praktische Geologie.
<i>Z. ver. dtsh. Chem.</i> . . . . .	Zeitschrift Vereins deutscher Chemiker.

(Certain periodicals listed above have not been available during 1947.)

