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RESEARCH GUIDE:

INDUSTRIAL MATERIALS AND PROCESSES

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RESEARCH GUIDES

INDUSTRIAL MATERIALS AND PROCESSES

I. SCOPE NOTE

Industrial materials are defined as those used in the manufacture of "hard" goods, such as more or less durable machines and equipment produced for industry and consumers, as contrasted with disposable "soft" goods, such as chemicals, foodstuffs, pharmaceuticals, and apparel. Materials processing, the series of operations that transforms industrial materials from a raw-material state into finished parts or products. *britannica.com*

II. SEARCH AIDS (BT: Broader Term, RT: Related Term, NT: Narrow Term)

BT:

- Industry; Materials

RT:

- Engineering materials
- Production processes
- Production system decision
- Production facilities
- Properties of materials
- Metals
- Nonmetals
- Engineering metals
- Manufacturing
- Heat treatment
- Processing
- Environmental reaction
- Casting and forming
- Machining
- Joining and finishing operations

NT:

- Wood
- Plastics
- Pulp and paper
- Rubber and elastomers
- Glass and ceramics
- Composites
- Ferrous metals
- Non-ferrous metals
- Resting of steel
- Dezincification of brass
- Degradation of plastic

- Welding
- Riveting
- Bolting
- Brazing
- Soldering

III. INFORMATION RESOURCES

A. LIBRARY RESOURCES

Note: For the appropriate access credentials, please contact the Letran Bataan Library

➢ **E-JOURNALS**

- IOP Conference Series. Materials Science and Engineering https://www.proquest.com/publication/publications_4998670
- Materials and Structures. https://www.proquest.com/publication/publications_326281
- Journal of Research of the National Institute of Standards and Technology https://www.proquest.com/publication/publications_48071
- Journal of Manufacturing Processes. https://www.proquest.com/publication/publications_45587
- Key Engineering Materials. https://www.proquest.com/publication/publications_2040931
- Journal of Materials Engineering & Performance. https://search.proquest.com/central/publication/publications_14822
- Advanced Materials & Processes. https://search.proquest.com/central/publication/publications_37377
- Applied Sciences. https://search.proquest.com/central/publication/publications_2032433
- Journal of Materials Science. https://search.proquest.com/central/publication/publications_2043599
- Journal of Environmental Engineering and Science. https://search.proquest.com/central/publication/publications_26310

➢ **E-THESES**

- Jamalian, M. (2020). Fabrication of gradient microstructure via severe plastic deformation to enhance mechanical performance of metals (Order No. 27742993). Available from ProQuest Central. (2451839881). Retrieved from https://www.proquest.com/dissertations-theses/fabrication-gradient-microstructure-via-severe/docview/2451839881/se-2?accountid=190548
- Armen, J. (2020). In-situ additive manufacturing of metals for embedding parts compatible with liquid metals to enhance thermal performance of avionics for spacecraft (Order No. 28156896). Available from ProQuest Central. (2489769214). Retrieved from https://www.proquest.com/dissertations-theses/situ-additive-manufacturing-metals-embedding/docview/2489769214/se-2?accountid=190548

- Dada, D. (2020). Elastic property characterization of additively manufactured alloys using ultrasound (Order No. 28031344). Available from ProQuest Central. (2551152248). Retrieved from https://www.proquest.com/dissertations-theses/elastic-property-characterization-additively/docview/2551152248/se-2?accountid=190548
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- Hayden, T. R. S. (2018). Wavelength modulation spectroscopy of industrial flame systems (Order No. 10928017). Available from ProQuest Central. (2113576311). Retrieved from https://www.proquest.com/dissertations-theses/wavelength-modulation-spectroscopy-industrial/docview/2113576311/se-2?accountid=190548
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- Hyde, D. G. (2019). Intra-action, emergence, and community-making in the industrial far west: Archaeological investigations at a Santa Cruz county lime kiln, 1858–1909 (Order No. 13883884). Available from ProQuest Central. (2296699898). Retrieved from https://search.proquest.com/docview/2296699898?accountid=190548
- Ashby, D. M. (2018). An analysis into the use of various systems engineering life cycle processes and their influence on the economic growth of the diversified industrial sector (Order No. 10844901). Available from ProQuest Central. (2099573119). Retrieved from https://search.proquest.com/docview/2099573119?accountid=190548
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- Shirgaokar, M. (2008). Technology to improve competitiveness in warm and hot forging: Increasing die life and material utilization (Order No. 10631261). Available from ProQuest Central. (1923888172). Retrieved from https://search.proquest.com/docview/1923888172?accountid=190548
- Gil Alvarez, E. (2004). Socio-economic and spatial impacts associated with the industrial crisis and the productive restructuring process in the region of San Sebastian (Donostialdea): The transition of sloping industrial area to innovate environment (Order No. 3285406). Available from ProQuest Central. (305082271). Retrieved from https://search.proquest.com/docview/305082271?accountid=190548

B. OPEN ACCESS

➢ FREE E-BOOKS

- Moayyedian, Mehdi (2019). Intelligent Optimization of Mold Design and Process Parameters in Injection Molding. Switzerland: Springer. https://www.pdfdrive.com/intelligent-optimization-of-mold-design-and-process-parameters-in-injection-molding-e187508497.html
- Mott, Robert L. & Untener, Joseph A. (2018). Applied Strength of Materials (6th ed.). Boca Raton, FL: CRC Press. https://www.pdfdrive.com/applied-strength-of-materials-e183870121.html
- Introduction to Process Safety for Undergraduates and Engineers (2016). Hoboken, NJ: John Wiley & Sons. https://www.pdfdrive.com/introduction-to-process-safety-for-undergraduates-and-engineers-e176121289.html
- Kutz, Myer (Ed.) (2015). Mechanical Engineers Handbook. Vol.1: Materials and Engineering Mechanics (4th ed.). Hoboken, NJ: John Wiley & Sons. https://www.pdfdrive.com/mechanical-engineers-handbook-vol-1-materials-and-engineering-mechanics-e157883538.html
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- Benhabib, Beno. (2003). Manufacturing Design, Production, Automation, and Integration. United States: Marcel Dekker, Inc. https://www.pdfdrive.com/manufacturing-design-production-automation-andintegration-manufacturing-engineering-and-materials-processing-d156707139.html

➢ **FREE E-JOURNALS**

- Journal of Manufacturing and Materials Processing-Open Access. https://www.mdpi.com/journal/jmmp
- Materials and Manufacturing Processes. https://www.tandfonline.com/loi/lmmp20
- Journal of Operations Management. https://onlinelibrary.wiley.com/journal/18731317

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- Malab, G. S. (2020). On the corrosion and additive manufacturing of 316L stainless steel. (Thesis). Monash University. Retrieved from http://hdl.handle.net/10.26180/13241243.v1
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- Eyers, D. (2015). The flexibility of industrial additive manufacturing systems. (Doctoral Dissertation). Cardiff University. Retrieved from http://orca.cf.ac.uk/74425/
- Shokravi, S. (2014). Environmental and economic performance evaluation and optimization for industrial processes. (Doctoral Dissertation). University of Melbourne. Retrieved from http://hdl.handle.net/11343/41021

C. PROFESSIONAL ORGANIZATIONS

- Operations Research Society of the Philippines. https://orsp.org.ph/
- Philippine Institute of Industrial Engineers. https://piie.org/
- IEOM Society. http://ieomsociety.org/
- Institute of Industrial and Systems Engineers. https://www.iise.org/Home/
- American Society Quality. https://asq.org/
- Association for Facilities Engineering. https://afe.clubexpress.com/content.aspx?sl=1566939199
- Association for Manufacturing Technology. https://www.amtonline.org/
- American Society for Precision Engineering. http://aspe.net/

D. OTHER RELATED WEB PORTALS

- The International Society of Logistics. http://www.sole.org/
- Mat Web. http://www.matweb.com/reference/link.aspx
- Institute of Industrial & Systems Engineers. https://www.iise.org/Default.aspx
- The Institute of Operations Research and Management Science. https://www.informs.org/
- Applied Ergonomics Society. https://www.iise.org/GoErgo/default.aspx

E. RELATED RESEARCH GUIDES

- Calpoly. https://guides.lib.calpoly.edu/ime
- University of Michigan Library. https://guides.lib.umich.edu/materials_collection
- The Tuffs Libraries. https://researchguides.library.tufts.edu/IndustryResearch
- Georgia Tech Library. https://libguides.gatech.edu/sb.php?subject_id=14803
- Slippery Rock University. https://sru.libguides.com/businessresources

IV. TUTORIALS

- What Is Materials Engineering? https://www.youtube.com/watch?v=ayU5lsx0t-A&t=620s
- How Things Are Made. An Animated Introduction to Manufacturing Process. https://www.youtube.com/watch?v=Um_g8sQ_p3Y
- Understanding and Analysing Trusses. https://www.youtube.com/watch?v=Hn_iozUo9m4
- Industrial Materials. https://www.youtube.com/watch?v=4pxhO6Pa1pw
- Punching/Shearing Formulas. https://www.youtube.com/watch?v=2y9OObhkn1I

- Lynda. https://www.lynda.com/Materials-training-tutorials/1332-0.html
- UNSW. http://www.materials.unsw.edu.au/tutorials/online-tutorials
- MIT Open Courseware. https://ocw.mit.edu/courses/materials-science-and-engineering/
- Tutorials. https://tutorials.one/industry-4-0/

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