

Curriculum Vitae of Yoginder P. Chugh

**Professor Emeritus, Southern Illinois University, Carbondale, IL
2025**

PERSONAL

Name: Yoginder P. Chugh

Present Address: 1027 Santiago Street
Durham, NC 27703
Tel: Cell- 618-201-3675
E-Mail: siu681@siu.edu
ypchugh1940@gmail.com

Present University Position: Professor Emeritus
Ex-Director, Combustion Byproducts
Recycling Consortium- Midwestern Region
U.S. Citizen since 1975

I. EDUCATION

- High School- Lahore Montessori School, New Delhi, 1957
- B.S., Mining Engineering, Banaras Hindu University, India, 1961
- M.S., Mining Engineering, The Pennsylvania State University, 1968
- Ph.D., Mining Engineering, The Pennsylvania State University, 1971
- Additional courses in Soil Mechanics, Operations Research, Statistics and Business, IIT-Chicago and MBA coursework from the University of Chicago, 1972-1973

III. PROFESSIONAL EXPERIENCE

A. Positions Held

- Invited Professor, Gujrat Minerals Development Corporation, India, September 2023
- Invited Professor, IIT-ISM, Dhanbad, India January-March 2021
- Invited Visiting Professor, China University of Mining and Technology- Beijing, July 2019
- Invited Professor, IIT-BHU and NIT- Surathkal, India February 2019
- SGRIP International Faculty Scholar, IIT Kharagpur, India, January 15 to March 15, 2018
- Distinguished Overseas Professor: China University of Mining and Technology, Beijing, 2013 to 2019
- Adjunct Professor, Indian School of Mines, Dhanbad, India July 1, 2007 to December 31, 2011.
- Professor of MMRE, July 1, 2000 to December 31, 2015
- Professor of MMRE, and Director, Combustion Byproducts Recycling Consortium- Midwestern Region, July 1, 2000 to September 30, 2008
- Professor, and Chairman, Department of Mining Engineering, July 1984 –June 2000

- Director, Management of Dry FGD By-Products in Underground Mines, 3.0-million-dollar Cooperative Agreement, U.S. Department of Energy, October, 1993 to September 30, 1999.
- Director, Illinois Coal Combustion Residues Management Program, July, 1991–June, 2000
- Director, Illinois Mining and Minerals Research Resources Institute, Jan. 1988 – 1999.
- Technical Director, National Mine Land Reclamation Center: Midwestern Region, 1988 - 1995.
- Professor, Department of Mining Engineering, August 1981 - June 1984.
- Acting Chairman, - September 1980 - August 1981
- Associate Professor, January 1977 - July 1981.
- Planning Engineer, AMAX Coal Co., October 1974 - January 1977
- Research Engineer, IIT Research Institute, November 1971 - September 1974.
- Research Associate, Henry Krumb School of Mines, January 1971 - October 1971.
- Research Assistant, The Pennsylvania State University, June 1965 - December 1970.
- Instructor, Banaras Hindu University, July 1964 - June 1965.
- Assistant Manager, Andrew Yule Coal Co., April 1961 - June 1964.

B. Membership in Professional Associations

- Member- American Society for Reclamation Sciences 2024
- Co-Chairman: American Society for Reclamation Sciences (International Initiative)
- Fellow, National Academy of Inventors, April 2016 to till date
- International Society for Rock Mechanics, 2010 to Present
- Member- ISRM Commission: Rock Mass Strength and Deformability 2023- Present
- American Institute of Mining Engineers (1965-present)
- Illinois Mining Institute (1974-2015)
- Member ABET Board of Directors (1989-1992)
- Member, American Society for Engineering Education (1985-2000)
- Member, Technology Accreditation Commission, (1995-1997)

C. Citations/Awards (Major Only)

- **1980s**
- SME Publications Board Award, 1982, 1983
- Distinguished Mining Department Alumnus Award, Banaras Hindu University, 1984,
- Outstanding Teacher, Department of Mining Engineering, 1984-1985,
- Outstanding Teacher, College of Engineering, 1984-1985
-
- **1990s**
- Centennial Fellow (Alumni Achievement) Award, Penn State University, 1996
- Professor of the Year Award, National Stone Association, 1999,
-
- **2000s**
- Outstanding Teacher, Mining and Mineral Resources Engineering, 2003
- Outstanding Scholar Award, SIU College of Engineering, 2005

- Outstanding Teacher, Mining and Mineral Resources Engineering, 2005
- Fulbright Award “Environmental Science and Engineering Programs,” 2006-, 2007
- Editorial Board, International Journal of Mining and Environment, 2005 till date.
- Outstanding College Faculty Member Award, 2007,
- IMI Award for Excellence (Industry support), September 2008
- The Rock Mechanics Award (high recognition in rock mechanics), SME 2009
- The Howard Eavenson Award (high recognition in coal mining), SME 2009
-
- **2010s**
- Illinois Mining Institute “Honorary Member Award”- Highest honor by IMI, 2010.
- SME Distinguished member Award, 2011.
- Fulbright Award, Dust Control Laboratory at Indian school of Mines, December 2011.
- 2011 Inventor of the Year Award, Southern Illinois University Carbondale, August.
- 2013 Start-Up Company of the Year, Southern Illinois University, August
- 2012 Old Timers Club Faculty Award, USA, September
- Nominated for Banaras Hindu University Outstanding Alumnus Award, 2012
- Chinese Government Fellowship for Coal and Energy, 2013-19 (Highly Prestigious).
- Invited Distinguished Professor- China University of Mining and Technology, 2015.
- SME-The Health & Safety Research and Educational Excellence Award, 2015.
- Inaugural Member, National Academy of Inventors SIUC Chapter, November 2015.
- SME- 2015 The Percy Nicholls Award, SME Annual Meeting, 2016
- Elected Fellow, National Academy of Inventors, January, 2016
- Stephen McCann Memorial Education Excellence Award, Pittsburgh Coal Mining Institute of America, 2017
- SGRIP International Faculty Scholar, IIT Kharagpur, January 15 to March 15, 2018
- Invited International Faculty Scholar, IIT-BHU; and NIT- Surathkal, India, 2019
- Distinguished Alumnus Award, IIT- BHU, Centenary Celebrations, February 2019
- **2020s**
- Distinguished Overseas Faculty, Indian School of Mines, January -March 2020
- Honorary Professor, China University of Mining and Technology, August 28, 2024
- Significant Contribution Recognition by National Key Laboratory for Mining Technologies and Development of Coal Resources, Beijing, China August 29, 2024
- **Conceived and Implemented American Society of Reclamation Sciences International Initiative: Dr. Y. Paul Chugh and Dr. Brenda Schladweiler; Co-Chairs, Approved June 2024. Currently has membership from USA, Canada, India, China, EU, South Africa, Australia.**
- **Conceived and implemented International Air Quality Monitoring in Surface Mines Research Group; Dr. Y. Paul Chugh-Chair and Dr. Siddharth Agarwal-Co-Chair; September 2024. Currently has membership from NIOSH-USA, Australia, USA, India, China, Canada. USEPA is considering being a part of this group.**

D. Invited and Keynote Lectures

2000s

- Invited, S. K. Bose Memorial Lecture, (Highly prestigious) Indian School of Mines, February 2003
- Keynote, International Conference on Processing of Gondwana Coals, Calcutta, India, February 2003
- Keynote, International Mineral Processing Conference, Indian School of Mines, January 2005
- Keynote, "Indo-Australia Joint Conference on Environmental Issues in Mineral Industries, Nov. 2007
- Invited by Coal India to provide ground control expertise for their mines, 2007.
- Invited Speaker, 16th International Conference of Mine Planning and Equipment Selection, Bangkok, Thailand, December 2007.
- Keynote Speaker, Indo-South Korea Conference on Geotechnical Science and Technology: An International Conference, February 2008.
- "International Member" of a Blue-Ribbon Panel "Sustainable Coal Development in China" led by the Vice Premier of China. May to December 2009.
- Keynote, Global Sustainable Energy Development: Review of Different Options", Int. Conference Energy Conversion and Management, Banaras Hindu University, 2009.
- Invited Visiting Professor to National University of Singapore- coal and energy. 2010.

2010s

- Fulbright Award "Dust Control in Surface and Underground Mining", December 2011.
- Visiting Professor to National University of Singapore, 2011
- Invited Distinguished Professor- China University of Mining and Technology, Xuzhou, December 4-18, 2015. Taught two Rock Mechanics and Ground Control Courses.
- Invited Keynote "Promoting Creative Thinking and Innovative Training at SIUC", Research Week at SIUC, Office of the Vice Chancellor for Research, April 4, 2016.
- Invited Keynote "Development of Ground Control Roof Bolting Plans: Recent Studies" International DEEP Conference, IIT Kharagpur, India, January 24-26, 2017.
- Invited Keynote "Concurrent Mining and Reclamation for Longwall Mining Subsidence in China", 2nd International Mine Reclamation and Ecological Restoration Conference, Xian, China, October, 2017.
- Invited Keynote "Concurrent Mining and Reclamation for Longwall Mining Subsidence: US and China Practices" World Mining Congress IOC Meeting, November 3-4, 2017, New Delhi, India.
- Invited Lecture at "Key Laboratory of Deep Mining and Excavations" A-3-D analysis of longwall face stability in thick coal seams", China University of Mining and Technology- Beijing, October 17, 2017.
- Invited "Institute-Wide" Lecture at IIT-BHU, February 6, 2019 "Why Universities in 21st Century Must Engage in Research?" one-hour lecture.

2020s

- Keynote "National Webinar on Mining Environment" Indian School of Mines, 2020
- Invited Lecture by Indian Industry "Sustainable Mining Development", June 2021
- Keynote "Third International Mine Reclamation and Ecological Conference", 2022
- Invited "National Institute of Rock Mechanics, India", July 2022
- Invited Keynote" International Society for Rock Mechanics -Ceylon Conference, 2023

- Invited Keynote: Global Minerals Industry: Projections to 2050", International Mining Conference- Ahmedabad, India, August 2023
- Invited Keynote, National Institute of Technology, Rourkela, India, February 7, 2024
- Invited Keynote "Ecological Assessment and Valuation" Shenyang, China, 2024
- Invited Keynote: Global Minerals Industry: Projections to 2050", BGRIMM Technology Center, August
- Invited, Macro-Level Geological Models and In-Mine Measurements for Ground Control, Key Laboratory of Rock Mechanics, Northeast University, China, August

TEACHING RELATED INFORMATION

IV. TEACHING EXPERIENCE

- A. Teaching Interests and Specialties:** Soil and Rock Mechanics, Ground Control and Subsidence, Surface Mining and Land Reclamation, Production Engineering in Coal Mining, Aerosols and Fugitive Dust Control, Leadership and Creativity in Professional Education
- B. Number of Students Completed Master's Theses and Doctoral Dissertation:** MS- 64, PhD- 14.
- C. Number of Post-Doctoral Staff Under My Direction-** 21 from different countries (Poland, China, India, Brazil, and Australia).

D. Teaching/Education Related Honors

1980s

- Outstanding Teacher, Department of Mining Engineering, 1984-1985
- Outstanding Teacher, College of Engineering, 1984-1985
- "Identification of Training Needs and Preparation of Implementation Plans for Coal Specialization Degrees in Indonesia," Diversified Management Services Toronto, Canada, under a World Bank Grant, 1987-1988
- Chair, Educational Issues Committee, Society of Mining Engineers, 1980-1991
- ABET Reviewer, Technology Programs, 1988-Present,
- Invited Visiting Professor, University of Missouri-Rolla, 1989.

1990s

- Member, ABET Board of Directors November 1989-October 1992
- Alternate Director, Technology Accreditation Commission, 1994-1995
- Director, Technology Accreditation Commission, 1995-1997,
- Panel Chair, Mining and Mineral Resources Engineering Education in the US. International Conference on Engineering Education: Progress through Partnership, August 13-15, 1998
- Two-Day Invited Short course on Rock Mechanics, Sao Paulo University, Brazil, 1999

2000s

- Consultant, Reorganization of Academic Programs, Indian School of Mines, 2000,
- Invited speaker, Civil Engineering, Ohio State University, May 2002
- Outstanding Department Teacher 2003, 2005

- Fulbright Award, 2006
- Adjunct Professor, Indian School of Mines, 2007
- Outstanding College Faculty Member Award, 2007

2010s

- Senior Specialist Fulbright Award, 2011
- Visiting Professor, National University of Singapore in Coal and Energy, 2010.
- Visiting Professor, China University of Mining and Technology in Sustainable Coal Development, 2010.
- Visiting Professor, National University of Singapore in Coal and Energy, 2011.
- Fulbright Scholar, Indian School of Mines, November-December 2011
- Invited Distinguished Professor- China University of Mining and Technology, Xuzhou, December 4-18, 2015. Taught two Rock Mechanics and Ground Control courses.
- SGRIP International Faculty Scholar, IIT Kharagpur, India January- March 2018.

E. International Activities

1980s

- "Memorandum of Agreement" for academic exchanges with China University of Mining and Technology in 1984. One of the most successful MOA at SIUC.
- "Implementation Plans for Mining Programs for Indonesia, 1989.

1990s

- Development and Implementation of MOU between the College of Engineering and Institute of Mining and Metallurgy, Ostrava, Czechoslovakia, October 1991.
- Developed cooperative relationships with University of Wollongong, Australia and National University of Mexico, Mexico City, 1993-1994.
- United Nations Sponsored extensive training program for four Chinese mining engineers on underground waste mine treatment, June 18 - August 2, 1996.
- Polish Team (Partners in Economic Reform) on issues related to mine, health and safety, April 1996.
- Innovative joint MS program with China Coal Research Institute, China University of Mining and Technology, SUN Yeqi Foundation, March-November 1997. First group of students arrived June 1998.

2000s

- Fulbright Fellowship to develop Environmental Science and Engineering Programs at the Indian School of Mines, Dhanbad, India 2006
- Invited to become Adjunct Professor at Indian School of Mines, 2007.
- Invited to lecture Institute of Technology, Banaras Hindu University, December 2009.

2010s

- Fulbright Scholar, Indian School of Mines, November-December 2011.
- Chinese Government Fellowship for Lecturing and Research in Coal and Energy, 2013-2019 (Highly Prestigious)
- International SGRIP Faculty Fellowship, IIT Kharagpur, January 15 to March 15, 2018

2020s

- Indian School of Mines, Visiting Professor, January -March 2020
- Nominated for China Friendship Award 2023

- **Conceived and Implemented American Society of Reclamation Sciences International Initiative:** Dr. Y. Paul Chugh and Dr. Brenda Schladweiler; Co-Chairs, Approved June 2024. Currently has membership from USA, Canada, India, China, EU, South Africa, Australia.
- **Conceived and implemented International Air Quality Monitoring in Surface Mines Research Group;** Dr. Y. Paul Chugh-Chair and Dr. Siddharth Agarwal- Co-Chair; September 2024. Currently has membership from NIOSH-USA, Australia, USA, India, China, Canada. USEPA is considering being a part of this group.
- Led a team of four US professionals to China for discussions on the subject “Ecological Assessments and Valuation” August 2024

RESEARCH RELATED INFORMATION

V. RESEARCH EXPERIENCE

A. Research Interests and Specialties: Large Volume Management of Coal Combustion Byproducts, Operations Research Applications to Mining, Applied and Experimental Rock Mechanics (Current), Strata Control and Mine Subsidence (Current), Dust control in coal mining (current), Sustainable Coal and Energy Development (Current)

B. Current Research Projects:

- Data collection for rib control in coal mines, NIOSH, two projects \$ 50,000., Working on a cooperative project with Indian School of Mines on “Real-Time Monitoring of Air Quality and GHG Gases in Indian Coal Mine, Application of Nature-Based Solutions for Abandoned Coal Mines, Digitalization of Mining Operations for Improved productivity and Safety.

C. Patents

Combustion By-products Related

- Chugh, Y.P., “An innovative Approach for Management of Waste Coal Slurry with Coal Combustion Byproducts”, April 2003. (Patent awarded)
- Chugh, Y.P “Coal Combustion Byproducts Based Lightweight Structural Materials and Processes for Making Them”, Patent No. 6,277,189, August 21, 2001. 40 pp
- Chugh, Y.P., 2007 “Coal Combustion Byproduct Based Friction Materials for Automotive Brakes, Patent application filed, October 2007. (Patent not awarded.)
- Chugh, Y.P., (2003), “Stabilization of coal wastes and combustion byproducts”, U.S. Patent and Trademark Office, Patent No. 6,554,888, April 29.

Rock Mechanics and Ground Control Related

- Chugh, Y.P. et al, "Intersection Roof Truss," Patent No. 5,018,907, May 1991
- Chugh, Y.P. et al, "Mine Roof Truss System," Patent No. 4,946,315, Aug. 1990.
- Chugh, Y.P. (2007), Engineered Composite Wooden Crib as a Mine Support”, Filed September 13, 2007, Patent granted, November 30, 2010, No. 7,841,805

- Chugh, Y.P. (2010), “Engineered Steel Crib for Use as Mine and Tunnel Support”, Provisional Patent Application, April 9, 2010, Final Patent Application Filed 2011.

Coal Mine Dust Related

- “Water Sprays for Dust Control on Mining Machines” Patent number 8,632,133.
- “Water Sprays for Dust Control on Mining Machines” Continuation patent application on Fourth Line of Defense Sprays. Approved. Patent No.8979212, March 17, 2015
- Micro-Emulsion technology for Dust Control” Provisional Patent Application, November 2013.
- “Dust Control Around Longwall Mining Machines”, Issued November 7, 2017 No US 8,979,212.

D. Research Grants Received

Principal or Co-Principal Investigator for over 95 research projects with total funding of over \$30 million during the period 1977-2019. If matching support from industries is included, the total amount would be larger than \$33 million dollars.

J. Consulting Activities

1. Worked as an independent consultant for at least 50 mining companies and state and federal government agencies. It includes some international consulting.

K. Evaluation of Manuscripts for Journals and Book Publishers and of Grant Proposals for Agencies

- Reviewed over 80 articles for publications in the Transactions of the Society of Mining Engineers and 40 grant applications for the U.S. Department of Energy, U.S. Bureau of Mines, and Mineral Institutes.
- Reviewed 25 articles for the U.S. Bureau of Mines.
- Reviewed over 75 articles in Rock Mechanics, Mine Subsidence.
- Reviewed over 100 proposals for National Mine Land Reclamation Center, and Coal Combustion Residues Management Program.
- Reviewed over 50 applications for the US Department of Commerce on Energy Related Inventions
- Evaluated over 110 paper manuscripts for journals and NIOSH during 2006-2012
- Evaluation of paper manuscripts for Elsevier Journal, 2009-2012
- International Journal of Coal Geology, 2009-2012
- Intl. Journal of Mining, Reclamation and Environment. Editorial Board. 2009-14
- International Journal of Environment and Pollution, 2014- Present
- Currently serving as “Reviewer” for five (5) top-tier journals.

Post- Retirement Activities (Beyond 2015)

Background: Students and industry-oriented research is what I have loved all my life. Retirement has not dampened my enthusiasm or slowed my pace in those arenas. I am currently focused in 3-4 areas.

- **Nurturing recently graduated students** (supervised by me or others) to settle down in their roles as Assistant Professors and /or industrial research. I have nurtured four professionals at the Post-PhD level and one at the MS level. Two post-PhD professionals are in the USA, one in India, and one in China. The MS professional works for the Department of Transportation for the State of Missouri. Most of my nurturing is done through ZOOM and telephone calls. I have helped them write proposals for research, launch research projects, and assisted them with writing research papers. I have also attempted to instill principles of creativity as they develop footholds in their profession. The nurturing of post- MS and PHD graduates is a real joy and that is an understatement. We have been averaging at least one good journal paper each year.
- **Reclamation and Ecological Management:** Over the last several years, I have developed significant interest in reclamation research with emphasis on “Ecological Management” for restoring mining-disturbed areas. My love for delving into new research areas has increased. Since I am now located close to DUKE University in the NC area, I have taken every opportunity to learn from them. DUKE is very strong in Ecological Assessment and Management Areas. During the first half of 2024, I developed a team of experts in the above area and we presented five (5) high-quality papers at the International Conference on Reclamation and Ecological Restoration in Shenyang China. They were very well received.

Based on my research interest in the reclamation area, I became member of the “American Society for Reclamation Sciences (or ASRS) effective January 1, 2024.

Soon thereafter I conceived an “International Initiative” for ASRS. My conceptions were very well received and in collaboration as co-chairs with Dr. Brenda Schladweiler-current President of ASRS, we successfully launched the initiative in May 2024. We plan to extend the membership now to South Africa, China, India, Australia starting in January 2025. We have developed lot of momentum in this initiative.

Late last October 2024, we brought together China (China University of Mining and Technology) and US collaborators (University of Tennessee at Knoxville) to launch a collaborative research project. The team has asked me to coordinate the implementation of the project. It is a 3-year research project funded by the Chinese Government.

- **Rock Mass Excavations and Their Stability:** My desire to contribute in this area has never been greater. Therefore, it is appropriate to mention that I am serving as one of the “Commissioners” for the ISRM “Rock Mass Strength and Deformability” Commission since November 2023. Over the last three months, one extremely bright post- PhD professional has asked that I nurture him. We are already well on our way to developing some novel technology concepts in rock mass deformation and failure. I am also working with two Chinese professionals in a low-key fashion to develop a reliable surface and underground stability monitoring system.

Selected Recent Publications:

- Vislavath S, S. Agarwal, Y. P. Chugh, P. Jha and R. Wang (2025), Advancing Sustainability in Surface Coal Mines Through Real-Time Air Quality Monitoring: Low-Cost IoT Solutions and the Role of Meteorological Factors in PM and GHG Emissions, *Sustainability Journal*, (2025, 17, 1301)
- Franklin, J.A., Chugh, Y.P., Schladweiler, B., Geidel, G (2025),” Ecosystem Assessment on Reclaimed Mines”, *Reclamation Matters*, Spring 2025
- S. Agarwal, Y. Paul Chugh, P. Jha, A Mukherjee, “IOT and AI-Based Smart Center for Particulate Matter Emissions Monitoring for Surface Coal Mines, Included in IMVC proceedings, August. 2024
- Ruiya Zhang, Yoginder P. Chugh. Sustainable Development of Underground Coal Resources in Shallow Groundwater Areas for Environment and Socio-Economic Considerations: A Case Study of Zhangji Coal Mine in China. *International Journal of Environment Resource and Public Health* 2023, 20 (6),
- Carlton, Corbin, Y. Paul Chugh “An Operations Analysis of Anna Quarry in Southern Illinois” Report submitted to mine management. June 2023
- Chugh, Y.P with contributions from Harrold Gurley, Neel Sinha, Behrooz Abbasi “Macro-Level Geologic Structural Analysis With In-Mine Measurements for Improved Ground Control and Productivity in Coal Mines”, *ISRM Invited Keynote Lecture*, December 2023
- Chugh, Yoginder P., and Siddhartha Agarwal. "A Digitalization Model Structure for Sustainable and Enhanced Profitability in Industry 4.0." In *2021 International Conference on Simulation, Automation & Smart Manufacturing (SASM)*, pp. 1-6. IEEE, 2021.
- 5213. <https://doi.org/10.3390/ijerph20065213>
- Zhenqi Hu, Ruiya Zhang, Yoginder. P. Chugh and Jia Jia. Mitigating mine subsidence dynamically to minimize impacts on farmland and water resources: a case study, *International Journal of Environment and Pollution*, 2016, Vol. 59, Nos. 2/3/4, pp.169–186.

APPENDIX I

PUBLICATIONS RELATED INFORMATION

A Books and Book Chapters

1. Geotechnical Engineering Related

- "Proceedings of the Fourth Conference on Ground Control for Midwestern U.S. Coal Mines," Editors Y.P. Chugh and G.A. Beasley, Southern Illinois University at Carbondale, August, 1992, pp.400. (Major)
- Chugh, Y.P., "Workshop on Design of Coal Pillars in Room-and-Pillar Mining," Southern Illinois University at Carbondale, December 1990, pp. 71.
- Chugh, Y.P., (Editors), Proceedings Third Conference on Ground Control Problems in the Illinois Coal Basin," Mt. Vernon, IL, August, 1990 pp. 392. (Major)
- "Proceedings of the Second Conference on Ground Control Problems in the Illinois Coal Basin," Editor Yoginder P. Chugh, May 1985. (Major)
- Chugh, Y. P., "Workshop on Design of Mine Openings in Room-and-Pillar Mining," Department of Mining Engineering, Southern Illinois University, Carbondale, IL, 1984.
- Chugh, Y. P. and K. V. K. Prasad, "Workshop on Design of Coal Pillars in Room-and-Pillar Mining, Department of Mining Engineering, Southern Illinois University, Carbondale, IL, June 1983.
- "Proceedings of the Polish-American Conference on Ground Control in Room-and-Pillar Mining," editor Yoginder P. Chugh, Society of Mining Engineers, January 1983. (Major)
- "Proceedings First International Conference on Ground Control in Longwall Mining and Mining Subsidence," Editors Yoginder P. Chugh and M. Karmis, Society of Mining Engineers, September 1982. (Major)
- "Proceedings of the First Conference on Ground Control Problems in the Illinois Coal Basin," editors Yoginder P. Chugh, A. VanBesien, June 1980. (Major)

2. Mining and Others Related

- Chugh, Y.P., B. Sangunett, and K. Vories. K., (Editors) "Proceedings of Coal Combustion By-Products Associated with Mining – Interactive Forum ", Southern Illinois University at Carbondale, October 29-31, 1996. (Major)
- Chugh, Y.P. et al., (Editors), Proceedings First Midwestern Region Reclamation Conference, Coal Extraction and Utilization Research Center, July 1990.
- "Proceedings of the Second International Conference on Processing and Utilization of High Sulfur Coals," Editors Yoginder P. Chugh and Rodney D. Caudle, Elsevier Science Publishers, New York, 1987. (Major)
- "Sustainable Coal Waste Disposal Practices" Book Chapter in "Advances in Productive, Safe, and Responsible Coal Mining", Ed. Joseph Hirschi 2018

A. Publications (Highly Peer- Reviewed)

Rock Mechanics and Ground Control Related

2011- Present

- [Chunlei Zhang](#), [Yoginder Chugh](#), [Ruimin Feng](#); and others (2021)“A Numerical Investigation of the Stress Relief Zones Around a Longwall Face in the Lower Seam for Gas Drainage Considerations; Computer Modeling in Engineering and Sciences 127(1),February; DOI: [10.32604/cmes.2021.014665](https://doi.org/10.32604/cmes.2021.014665)”
- Carlton, Corbin and Y. P. Chugh (2019),” An analysis of stresses and displacements around fault plane due to longwall face advance in coal mining” 53rd U.S. Symposium on Rock Mechanics, New York, NY June 22-24, 2019at coal mine intersections”,
- Chugh, Y.P., S. Sinha, H. Gurley, and E. Esterhuizen (2018), “Time-dependent field measurements of immediate roof deformations at coal mine intersections”, 52nd U.S. Symposium Rock Mechanics, Seattle, Washington, June 17-20.
- Song, G and Y.P. Chugh (2018),” 3D analysis of longwall face stability in thick coal seams, South African Journal of Mining and Metallurgy, v118, pp131-142
- Feng, G; Pengfei Wang*, Y. P. Chugh, Jingli Zhao, Zhiqiang Wang. A New Gob-side Entry Layout for Longwall Top Coal Caving” [J]. Energies. 2018, 11(5): 1292.
- Feng, G; Pengfei Wang*, Y. P. Chugh. Stability of the Gate Road Next to an Irregular Yield Pillar: A Case Study” [J]. Rock Mechanics and Rock Engineering. 2018, 1-20. <https://doi.org/10.1007/s00603-018-1533>.
- Feng, G; Pengfei Wang*, Y. P. Chugh, Jingli Zhao, Zhiqiang Wang, Zhipeng Zhang. “A Coal Burst Mitigation Strategy for Tailgate during Deep Mining of Inclined Longwall Top Coal Caving Panels at Huafeng Coal Mine”, [J]. Shock and Vibration, 2018: 1-18. <https://doi.org/10.1155/2018/5929785>.
- Wang, Pengfei; Jingli Zhao, Y. P. Chugh, Zhiqiang Wang. A novel longwall mining layout approach for extraction of deep coal deposits” [J]. Minerals. 2017, 7(4), 60.
- Chugh, Y. P. (2017, “Concurrent Mining and Reclamation for Underground Coal Mining Subsidence Impacts in China” Int. J. Coal Science and Technology”, Published.
- Song, G and Y. P. Chugh (2017), “A 3-D analysis of longwall face stability in thick coal seams,” South African Journal of Mining and Metallurgy, Published.
- Song G, Y. P. Chugh, J. Wang. A numerical modelling study of longwall face stability in mining thick coal seams in China. Int. J. of Mining and Mineral Engineering, 2017 Vol.8, No.1, pp.35 - 55.
- Sinha, S and Y.P. Chugh (2016), “Analysis of Roof Control Plans for Improved Stability at Four-Way Intersections”, 2016 American Rock Mechanics association (ARMA) conference proceedings, Houston, Texas June 24-26.
- Sinha, S, Y.P. Chugh (2015), “An evaluation of roof support plans at two coal mines in Illinois through numerical models”, International Journal of Rock Mechanics and Mining Sciences”. Vol. 82, 1-9
- Bastola, S and Y. P. Chugh (2015), “Shear strength and stiffness of bedding planes and discontinuities in the immediate roof rocks overlying the No 6 coal seam in Illinois, ISRM Congress Proceedings, May 9-13, 2015. Paper no 699

- Chugh, Y.P and S. Sinha (2015), "Numerical modeling of roof support plans at 4-way coal mine intersections", 2015 American Rock Mechanics association (ARMA) conference proceedings, San Francisco, CA, June 26-30. ARMA 15-846
- Chugh, Y. P, H. Gurley and B. Abbasi (2015), "In-mine measurements and analysis of ground movements while crossing a geologic fault using a longwall mining method", ISRM Congress Proceedings, May 9-13, 2015. Paper no. 701
- Chugh, Y. P and Paul Behum (2014), "Coal waste management practices in the USA: An overview", International Journal of Coal Science and Technology, V1, Issue 2 (2014), pp 163-176.
- Feng, R and Y. P. Chugh (2014), "Development of backfill parameters for control of surface and subsurface mining related movements", International Conference on Land Reclamation and Ecological Restoration Proceedings, China University of Mining and Technology Beijing, China, October. pp:
- Abbasi, B, Y.P. Chugh, and H. Gurley (2014), "An analysis of possible fault displacements associated with a retreating longwall face in Illinois", ARMA 2014, Paper No. 14-7632, Minneapolis.
- Wu Xiao, Zhenqi Hu, Y. P. Chugh and Y. Zhou (2013) 'Dynamic Subsidence Simulation and Top Removal Strategy in High-Ground Water and Underground Coal Mining Areas: A Case Study in Shandong Province, International Journal of Mining, Reclamation and Environment", E-journal, September 2013.
- Chugh, Y. P., B. Abbasi, and J. Hirschi (2013), "Field Performance of Alternate Geometries for Set-Up Rooms and Development Entries in Longwall Mining," Ibid
- Chugh, Y. P., H. Gurley (2013), "Longer-term field performance testing of grouted bolts in different lithologies," 35th International Conference on Safety in Mines Research Institutes, London, October.
- Abbasi, B, and Y. P. Chugh (2013), "An analysis of stability of three-way and four-way coal mine intersections," 2013 Indo-Rock International Conference, Solan, India, May 2013.
- Chugh, Y. P. (2013) "Application of Rock Mechanics to Enhance Profitability", Ibid.
- Chugh, Y. P., H. Gurley (2013), "Development and Demonstration of Alternate Room-and-Pillar Mining geometries for Improved Ground Control in Mining," Soft Rock Commission report, International Society for Rock Mechanics, Warsaw, Poland, June.
- Chugh, Y. P., H. Gurley (2013), "Effects of out-of-Seam dilution on production, processing, environment and cost," International Mineral Processing Technology, Bhubneswar, December. (Keynote Speaker)
- Chugh, Y.P, H. Gurley, and W. Bell (2011), "Longer-Term Performance of Grouted Bolts in Different Lithologies in the Illinois Coal Basin Mines", International Society of Rock Mechanics Congress, Beijing, China, October 19-21. Paper Number- ISRM 2011-0299
- Chugh, Y.P and B. Abbasi (2011), "A Numerical Analysis of a Four-Way Coal Mine Intersection with Primary and Secondary Supports", Ibid. Paper Number- ISRM 2011-0334.
- Chugh, Y.P, B. Abbasi, H. Gurley (2011), "Identification of Mechanisms of Instability in Set-Up Rooms in Longwall Mining", 34th International Conference of Safety in Mines Research Institutes, New Delhi, India pp. 329-344
- Chugh, Y.P, B. Abbasi, J. Hirschi (2011), "A Numerical Analysis of a Four-Way Coal Mine Intersection with Primary and Secondary Supports: Additional Analyses", International Pittsburgh Coal Conference Proceedings, September 13-15

- Gurley, H, Y.P. Chugh, and Joe Hirschi (2011), "Assessment of Engineered Cribs for Mine Support", International Pittsburgh Coal Conference Proceedings, September 13-15.
- Basnett, Kenny, and Y. P. Chugh (2011), Mapping and Application of Roof Joint Patterns for Ground Control in an Illinois Mine", International Ground Control Conference Proceedings, Morgantown, August.

2001-2010

- Chugh, Y.P. and H. Gurley (2010)," A Field Demonstration of an Engineered Crib as Tail Gate Entry Support in Longwall Mining, International Society for Rock Mechanics Meeting, New Delhi, November 2010.
- Chugh, Y.P. and H. Gurley (2010), "Development and Demonstration of Alternate room-and-Pillar Geometries for Improved ground Control in Mining", Ibid
- Chugh, Y. P., and Sheng Li (2010), "A Displacement-Based Approach to Coal Mine Intersection Stability Analysis", Ibid.
- Chugh, Y.P, (2008), Application of rock mechanics to enhance mine-profitability: case studies, MPES Conference, Beijing, China, October 20-23, 2008,
- Sheng Li, Y.P. Chugh, Jinrong Ma, John Stankus (2008), An analytical study for design of primary support system around a coal mine intersection, MPES Conference, Beijing, China, October 20-23, 2008,
- Chugh, Y. P, Amit Patwardhan, S. Munish, 2007, "Design and Demonstration of Cattle Feeding Pads using Coal Combustion Byproducts including Sulfite-rich Scrubber Sludge," World of Coal Ash, Covington, KY June 2007.
- Chugh, Y. P, Amit Patwardhan, S. Kumar, 2007, Demonstration of CFB Ash as a Cement Substitute in Concrete Pier Foundations for a Photo-Voltaic Power System at SIUC," World of Coal Ash, Covington, KY June 2007.
- Chugh, Y.P., S. Mohanty, and P. Filip (2007), Development and Characterization of Coal Utilization Byproducts Based Automotive Brake Linings, Brake Colloquium, Orlando, Florida, October
- Hirschi, J.C., Chugh, Y.P. and Moharana, A, 2006, "Development of Alternate Geometry Concepts for increased Extraction, Ground Stability and Productivity at a Shallow Depth Illinois Coal Mine", Proceedings of the Mine Planning and Equipment Selection Symposium-2006, Ed: M. Cardu, R. Ciccu, E. Lovera, E. Michelotti, pp 1118-1123,
- Deb, D and Y.P. Chugh (2005), "Development and underground placement of paste backfill material based on coal combustion byproducts and coal processing waste," International Fly Ash Congress, December 4-7, 2005, New Delhi, India.
- Chugh, Y.P., (2005), "Application of Rock Mechanics to Enhance Mine Profitability: Case studies," Proceedings 20th World Mining Congress, Teheran, Iran, November 2005.
- Chugh, Y.P., M. Prichard, G. Balk, J. Ma, (2004), "Development and Demonstration of Coal Utilization Byproducts-Based Artificial Supports for Underground Mine Use," Ash Utilization Symposium, University of Kentucky, October, 15th International ACAA Symposium Paper- 7-1
- Chugh, Y.P., W. Pytel, J. Ma, (2004), "Development and Demonstration of an Alternate Geometry for Improved Ground Control in an Illinois Coal Mine", 23rd International Conference on Ground Control in Mining, Morgantown, WV, USA, August 3-5.

- Chugh, Y.P., J. Ma, (2004), "Coal Utilization Byproducts-based Artificial Supports – Recent Developments", 23rd International Conference on Ground Control in Mining, Morgantown, WV, USA, August 3-5.
- Chugh, Y.P., J. Ma, S. Mohanty, (2004), "An Analysis of the Stability of Partially Backfilled Coal Mine Layouts Underlain by Weak Floor Strata", 5th International Symposium on Mining Science and Technology, China University of Mining and Technology, Xuzhou, Jiangsu, P.R. China, October 20-22.
- Ma Jinrong, Y.P. Chugh, (2004), "Design and Analysis of Coal Combustion Byproducts (CCBs) Based Artificial Supports", 5th International Symposium on Mining Science and Technology, China University of Mining and Technology, Xuzhou, Jiangsu, P.R. China, October 20-22.
- Chugh, Y.P., D. Deb, D. Biswas, (2003), "Underground Placement of Coal Processing Waste and Coal Combustion Byproducts Based Paste Backfill for Enhanced Mining Economics," Proceedings 19th World Mining Congress, November 1-5, pp 1327-1342
- Chugh, Y.P., M. Prichard, G. Balk, J. Ma, (2004), "Development of Coal Utilization Byproducts Based Artificial Supports for Underground Mine Use," Ash Utilization Symposium, University of Kentucky, October, 15th International ACAA Symposium Paper 7-1.
- Ma, Jin Rong, Y.P. Chugh, D. Deb (2001) "An Analysis of the Effects of Sandstone Channel in the Roof on the Longwall Face Stability Using Finite Element Method," Frontiers of Rock Mechanics and Sustainable Development in the 21st Century, Proceedings of the 2nd Asian Rock Mechanics Symposium, Beijing, China, September 11-14, pp. 385-393
- Chugh, Y.P., Debasis Deb, and Raju, C.B., (2000) "Physical and Engineering Properties of Coal Combustion By-Products", Coal Combustion By-Products Management Workshop, Office of Surface Mining/U.S. Department of Energy, Morgantown, W.V., April
- Chugh, Y.P., Prichard, M., Deb, D., and Wilcox, H., (2000) "Development and Demonstration of CCBs Based Structural Products for Mine Use", Ibid.
- Chugh, Y.P., Deb, D., Dutta, D., Caldwell, M., (2000) "Underground Placement of Coal Processing Waste and Coal Combustion By-Products Based Paste Backfill for Enhanced Mining Economics", Ibid.
- Chugh, Y.P., Amit Patwardhan, S. Munish (2007), Design and Demonstration of Cattle Feeding Pads using Coal Combustion Byproducts including Sulfite-Rich Scrubber Sludge", Fuel Journal.
- Mohanty, S and Y.P. Chugh (2007)," Development of fly ash-based automotive brake lining, Tribology International 40 (2007) 1217–1224
- Biswas, D, and Y. P. Chugh (2007), "Analysis of Paste Backfill Grout Flow in Room-and-Pillar Mine Workings," Transaction Society for Mining Engineers.2007
- Chugh, Y.P., S. Mohanty, and P. Filip (2006): Development of Automotive Brake Friction Materials Using Large Volume Illinois Fly Ash," Braking 2006. International Conference, York, England
- Mohanty, S. and Y.P. Chugh (2006), Post-construction Environmental Monitoring of a Fly Ash-based Road Subbase," Practice Periodical on structural Design and construction, Vol. II, no 4.
- Mohanty, S. and Y.P. Chugh (2006), Structural Performance Monitoring of an Un-stabilized Fly Ash – Based Road Subbase," Journal of Transportation Engineering, Vol 132, no 12, pp.

- Chugh, Y.P., Patwardhan, A., Gurley, H., Munish, S. and Botha, F., 2006, "Development of Construction Materials Using Sulfite-rich Scrubber Sludge and Fly-ash," Fuel, Vol. 85, No. 16. 2323-2329.
- Chugh, Y.P., (2003), "Stabilization of coal wastes and combustion byproducts", U.S. Patent and Trademark Office, Patent No. 6,554,888, April 29.
- Y.P. Chugh, D. Biswas and Jinrong Ma, (2003) "Simplified concept to assess stability of partially backfilled mine openings: Part 1—Development," Transactions Vol. 314 pp 44-50.
- Biswas, D. and Y.P. Chugh, (2003) "Simplified concept to assess stability of partially backfilled mine openings: Part 2 — Application", Transactions, Volume 314, pp 51 - 54, Society for Mining, Metallurgy, and Exploration, Inc.
- Chugh, Y.P. S. Sengupta, (2003) "Development of Controlled Low Strength Materials Using Large Volume Coal Combustion Byproducts," Transactions Vol. 314 pp 129-137
- Ma, Jin Rong, D. Deb, Y.P. Chugh (2001) "Analysis of the Effects of Weak Floor Strata on Longwall Face Stability Using Finite Element Modeling", Journal of Coal Science and Engineering, Vol. 7, No. 1, pp. 1-8.
- Chugh, Y.P., M. Pritchard, D. Deb, H. Wilcox (2001) "Development and Demonstration of CCBs-Based Structural Products for Mine Use," Transactions of the Society for Mining, Metallurgy, and Exploration, Inc., 2001.
- Chugh, Y.P., (2001), "Coal Combustion Byproducts Based Lightweight Structural Materials and Processes for Making Them" U.S. Patent and Trademark Office, Patent No. 6,277,189, August 21.

1991-2000

- Chugh, Y.P., D. Dutta, S. Renninger, (1998) "A Field Demonstration of the Coal Combustion By-Products Based Backfill for Subsidence Control in Illinois", Annual Meeting of the American Society for Surface Mining and Reclamation, May 16- 21.
- Zhang, Yuzhuo, Y.P. Chugh & Guolin Yang, (1995) "Fuzzy neural network for chain pillar design in longwall coal mining", Proceedings of 35th U.S. Symposium on Rock Mechanics, June.
- Chugh, Y.P., K. Mehta, G. Yang, (1995), "Probabilistic Subsidence Prediction Based on Field Observed Data for Jointed Overburden", Ibid pp. 207-216.
- Chugh, Y.P., A.K. Ghosh, K. Mehta, Y. Zhang, S.R. Palmer, Y. Xio, S. Peng, (1995) "Lightweight combustion residues-based structural materials for use in mines", Proceedings of International Ash Utilization Symposium, Lexington, Kentucky, October 23-25.
- Chandrashekhar, K. and Y.P. Chugh (1994), "Three-Dimensional Finite Element Modeling of Roof-Pillar-Floor Interaction for Stability of a Four-Way Coal Mine Intersection," The North American Rock Mechanics Symposium, Austin, TX.
- Zhang, Y. and Y.P. Chugh (1994), "Fluid Flow Network and Fractal Diffusion Fronts in Fractured Rock Mass," North American Rock Mechanics Symposium, Austin, TX.
- Yu, Z., Y.P. Chugh (1994), "Development of Subsidence Profile Functions for Longwall Mining Associated with Weak Floor Strata Considering Time Effects," 8th International Symposium for Computer Methods and Advances in Geomechanics, West Virginia University, June.
- Yang, G., Y.P. Chugh, Z. Yu, M. Salamon (1993), "A Numerical Approach to Subsidence Prediction and Stress Analysis in Coal Using a Laminated Model," 34th

U.S. Symposium on Rock Mechanics, University of Wisconsin, Madison, June, pp. 149-152.

- Yu, Z. Y.P. Chugh, P. Miller, G. Yang, (1993), "A Study of Ground Behavior in Longwall Mining through Field Instrumentation," 34th U.S. Symposium on Rock Mechanics, University of Wisconsin, Madison, June, pp. 733-737.
 - Chugh, Y.P., W.M. Pytel, (1992), "Design of Partial Extraction Coal Mine Layouts for Weak Floor Strata Conditions", Proc. of the Workshop on Coal Pillar Mechanics and Design, Information Circular 9315, U.S. Bureau of Mines, pp. 32-49.
 - Hao, Q.W. and Y.P. Chugh, (1992), "Engineering Approaches to Predict Subsidence Likelihood Over Abandoned Mines in Illinois," Proc. 3rd Workshop on Surface Subsidence Due to Underground Mining, Morgantown, WV, June 1-4, pp. 189-196
 - Hao, Q.W. and Y.P. Chugh, (1992), "Development of Void Diffusion Models to Predict Subsidence Due to Underground Coal Mining," Proc. 11th Int. Conference on Ground Control in Mining, The University of Wollongong, NSW, Australia, July.
 - Pytel, W.M., and Y.P. Chugh. (1991), "Simplified Three-Dimensional Roof-Pillar-Floor Interaction Analysis Model Including Time Effect". Proceedings of the 32nd U.S. Symposium on Rock Mechanics, Oklahoma Univ., Norman, ed. by J.C. Roegiers, A.A. Balkema, pp. 781-790.
 - Hao, Q-W., Y.P. Chugh, and W-M. Ma, (1991), "Prediction of Longwall Mine Subsidence Based on a Nonlinear Void Diffusion Model", Proceedings Eighth International Congress on Mine Surveying, University of Kentucky, Lexington, KY, September 22-27.
 - Hao, Q-W., and Y.P. Chugh, (1991) "Error Analysis of Subsidence Monitoring Using Tiltmeter Surveys", Proceedings 34th Annual Meeting of Association of Engineering Geologists, Chicago, IL, September 29 - October 4, pp.1021-1030.
- Chugh, Y.P., W.M. Pytel, (1992) "Design of Partial Extraction Coal Mine Layouts for Weak Floor Strata Conditions", Proc. of the Workshop on Coal Pillar Mechanics and Design, Information Circular 9315, U.S. Bureau of Mines, pp. 32-49.

1981-1990

- Chugh, Y.P., O. Pula, W.M. Pytel, (1990), "Ultimate Bearing Capacity and Settlement of Coal Pillar Sub-Strata," Intl. J. of Mining and Geological Eng., vol. 8, p. 111-130.
- Missavage, R.J., Y.P. Chugh and T. Roscetti (1986), "Subsidence Prediction in Shallow Room-and-Pillar Mines," International Journal of Mining Engineering, Chapman and Hall, March.
- Chugh, Y.P., C. Bandopadhyay and R. D. Caudle (1984), "Effect of Soft Floor on Underground Mining at an Illinois Basin Coal Mine," International Society of Rock Mechanics, Cambridge, England, September.
- Chugh, Y.P., A. Okunola and M. Hall (1980), "Moisture Absorption and Swelling Behavior of the Dykersburg Shale," Transactions of the Society of Mining Engineers.
- Chugh, Y.P. (1974), "Viscoelastic Behavior of Geological Materials under Tensile Stress," Transactions of the Society of Mining Engineers, 256, pp. 259-264, September.
- Pula, O., Y.P. Chugh, W.M. Pytel (1990), "Estimation of Weak Floor Strata Properties and Related Safety Factors for Design of Coal Mine Layouts," 31st Symposium on Rock Mechanics, Denver, Co., June 1990.

- Pytel, W.M., Y.P. Chugh, O. Pula (1990), "An Approach for Design of Coal Pillars in Partial Extraction Coal Mining Panels with a Consideration of Roof-Pillar Floor Interaction, *ibid*.
- Eichfeld, W., E. Ono, Y.P. Chugh, G. Chen (1990), "Application of Photogrammetric Techniques in Assessing Underground Mine Opening Deformations and Stability, *ibid*.
- Hao, Q-W, and Y.P. Chugh (1990), "Potential of a Void Diffusion Model To Predict Longwall Subsidence in Illinois Basin Coal Mines," 9th International Conference on Ground Control in Mining, Morgantown, W.V. June.
- Chugh, Y.P. and A. Atri (1989), " Surface Subsidence Monitoring and Prediction at a Shallow Partial Extraction Room-and-Pillar Mine in Midwestern United States," 30th U.S. Symposium on Rock Mechanics, Morgantown, W.V. pp 715-722.
- Chugh, Y.P., A. Atri, J. Dougherty (1989), "Laboratory and Field Characterization of Immediate Floor Strata Associated with Illinois No. 6 and No. 5 Coal Seams," *Ibid* pp. 47-56.
- Pytel, W.M. and Y.P. Chugh (1989), "An Analysis of Roof-Pillar-Weak Floor Interaction in Partial Extraction Room-and-Pillar Mining," *Ibid*, pp 621-628.
- Chugh, Y. P., S. Kuscu, A. Atri, R. Sweigard, (1988), "Subsidence Monitoring at a Shallow Partial Extraction Room-and-Pillar Mine in Midwestern United States," 7th International Conference on Mine Surveying, Leningrad, Russia, June.
- Chugh, Y. P., K. Chandrashekhar, R. D. Caudle (1988), "A Field Geotechnical Study of the Effects of Weak Floor Strata on Underground Coal Mining in Illinois," Proceedings 29th U.S. Symposium on Rock Mechanics, Minneapolis, Minnesota, June.
- Pytel, W. M., Y. P. Chugh, B. Zabel, R. D. Caudle (1988), "A Simplified Two-Dimensional Analysis of the Roof-Pillar-Floor Interaction Problem in Coal Mines," 7th International Conference on Ground Control in Mining, Morgantown, W.VA, August.
- Chugh, Y.P., K.V.K. Prasad and R. Missavage (1986), "A Case Study of Geotechnical Studies for an Improved Room-and-Pillar Mining System in Illinois," Proceedings, 27th U. S. Symposium on Rock Mechanics, Society of Mining Engineers, Littleton, CO
- Chugh, Y.P., K. Chandrashekhar, R. Missavage and S. Ober (1986), "An Analysis of Subsidence Movements Associated With An Abandoned Shallow Room-and-Pillar Coal Mine," Second Workshop on Subsidence in Underground Coal Mining, Ed. Syd S. Peng, West Virginia University, Morgantown, WV, pp. 194-203.
- Chugh, Y.P., (1986), "Effect of Moisture on Anchorage Capacity of Expansion Shell Rock Bolts, "Proceedings 26th U.S. Symposium on Rock Mechanics, Ed. E. Ashworth, South Dakota School of Mines, pp. 413-423.
- Chugh, Y.P. (1985), "Effect of Soft-Floor Interaction on Partial Extraction Room-and-Pillar Mining," International Bureau of Strata Mechanics, World Mining Congress, Varna, Bulgaria, June.
- Missavage, R. and Y.P. Chugh (1985), "Ground Control in Multiple Seam Mining," Illinois Mining Institute Proceedings, Springfield, IL, pp. 35-47.
- Chugh, Y.P., R. Missavage, R. D. Caudle, S. Ober and K. V. K. Prasad (1984), "Effect of Pillar Extraction on Roof Control," Annual Meeting of the American Mining Congress and International Coal Show, Chicago, IL, May.
- Chugh, Y.P. and C. Bandopadhyay, (1984), "Effect of Soft Floor Interaction on Retreat Mining," Second International Conference on Stability in Underground Mining, Lexington, KY, August.

- Huck, P.J. and Y.P. Chugh (1982), "Subsidence Control in Abandoned Room-and-Pillar Mines," Conference Proceedings Ground Control in Room-and-Pillar Mining, Society of Mining Engineers of AIME, ed. Y. P. Chugh, September.
- Chugh, Y.P. (1982), "Effect of Moisture on Weatherability and Bolt Anchorage Capacity of Shales," Proceedings Sixth Symposium on Engineering Applications of Mechanics, Calgary, Alberta, June.
- Chugh, Y.P., R.D. Caudle, and V.K. Agarwala (1982), "Pre-mining Investigations for Longwall Coal Mining", State-of-the-Art of Ground Control in Longwall Mining and mining Subsidence, Eds. Y.P. Chugh and Michael Karmis, Published by the Society for Mining Engineers, pp 3-12.
- Gupta, R.N., N.C. Saxena, Y.P. Chugh and B. Singh (1981), "Rock Mechanics Investigations of the Ground Movements in a Shaft," Institute of Technology, Proceedings of the 22nd U.S. Symposium on Rock Mechanics, Cambridge, p. 7, June.
- Chugh, Y.P., R. Fitzanko and J. Bauer (1981), "Moisture Absorption and Swelling Behavior Under Cyclic Humidity Conditions," AIME Mini-Symposium, Effect of Moisture on Ground Control in Mining and Tunneling, Chicago, IL, pp. 21-29, February.

Before 1980

- Singh, M.M. and Y.P. Chugh (1968), "Design of Roof Bolting Installations in Stratified Deposits," Mining and Minerals Engineering, pp. 98-104, March.
- Kester, W.M. and Y.P. Chugh (1980), "Premining Investigations and their use in Planning ground Control in Illinois basin Coal Mines", Proceedings First Conference on Ground Control Problems in the Illinois Coal Basin, Southern Illinois University Carbondale, pp 33-43
- Chugh, Y.P. and G. Heidinger (1978), "Effect of Coal Lithology on Microseismic Activity in Coal," Proceedings Second International Conference on Acoustic Emissions/Microseismic Activity in Geologic Structures and Materials, The Pennsylvania State University, pp. 55-62.
- Chugh, Y.P. and H.R. Hardy, Jr. (1972), "Analytical Study of Pressurized Elliptical Cavities," Proceedings of 14th Rock Mechanics Symposium, The Pennsylvania State University, University Park, PA, pp. 339-392.
- Hardy, H.R. and Y.P. Chugh, (1972), "Failure of Geologic Materials Under Low Cycle Fatigue," Proceedings 6th Canadian Symposium on Rock Mechanics, Montreal, Canada, pp. 33-47.
- Chugh, Y.P., H.R. Hardy, Jr. and R. Stefanko (1968), "An Investigation of the Frequency Spectra of Microseismic Activity in Rock Under Tension," Proceedings Tenth Symposium in Rock Mechanics, The University of Texas at Austin, pp. 73-114.

Mine Ventilation and Coal Mine Dust Control Related

2011- Until Present

- Kollipara, V and Y. P. Chugh (2017)," CFD Modeling of dust dispersion in a room-and-pillar mining area: a case study", 16th North American Mine Ventilation Symposium, Golden Colorado, June

- Chugh, Y.P., A. Chandna, and H. Gurley (2016),” An analysis of airflow patterns around a longwall shearer with a proposed modified spray system for dust control. South African of Mine Ventilation, December.
- Chandna, A, Y.P. Chugh, and H. Gurley (2015),” An analysis of airflow patterns around a longwall shearer operating in a coal mine”, International Journal of Mine Environment and Reclamation, **Accepted for Publication South African Journal of Mine Ventilation, 2017**Chugh, Y.P. and V. Kollipara (2015), “CFD modeling of dust dispersion in a room-and-pillar mining area”, International Journal of Environment and Pollution, **Published**
- Kollipara, V.K., & Chugh, Y.P. (2015). A CFD analysis of wet-scrubber operation in room-and-pillar mining area. Journal of South African Mine Ventilation, **Published**, October 2015.
- Chugh, Y.P., Md Azmi, A. Z., Gurley, H., Kollipara, V.K., & Hirschi, J., (2015). CFD analysis of airflow distribution in high mining areas of room-and-pillar coal mining. Application of Computers and Operations Research in the Mineral Industry, May 23-27th, Fairbanks, AK.
- Kollipara, V.K., Chugh, Y.P., Mondal, K. (2015). Physical, mineralogical and wetting characteristics of dusts from interior basin coal mines. International Journal of Coal Geology, 127, 75-87.
- Chugh, Y.P., Mondal, K., Kollipara, V.K., Gurley, H., Relangi, D.D., & Bariar, B. (2015). Sources and wetting characteristics of respirable coal and silica dusts from selected interior basin coal mines. Centre for Deceased Control/National Institute of Occupational Safety and Hazard Final Report (Grant no: 5 R01 OH 009772-03).
- Kollipara, V.K., Chugh, Y.P., Gurley, H., & Hirschi, J., (2014). CFD analysis of airflow distribution in a room and pillar mine. 10th International Mine Ventilation Congress, Sun City, South Africa, August 2-8.
- Mondal, K., and Y. P. (2014). Wettability of dust generated in Interior Basin coal mines. 10th International Mine Ventilation Congress, Sun City, South Africa, August 2-8.
- Chugh, Y.P., H. Gurley, and J. Hirschi (2014),” Field experience with SIUC spray system for continuous miners with coal mine dust control”, Ibid.
- Chugh, Y. P., H. Gurley, V. Kollipara, and J. Hirschi (2013), “A Field assessment of an SIUC spray system for continuous miners,” 2013 World Mining Congress Meeting, August , Paper 270.
- Chugh, Y. P., H. Gurley, V. Kollipara, and J. Hirschi (2013), “Spray Systems Design for Continuous Miners Dust Control in High Mining Areas”, Ibid, Paper Number 271.
- Chugh, Y. P., H. Gurley, V. Kollipara (2013), “Field performance of an SIUC spray system for coal mine dust control,” International Pittsburgh Coal Conference proceedings, Beijing, September.
- Chugh, Y.P., Gurley, H., Kollipara, V.K., Pulliam, J., Hasenstab, T., Winters, D., & Followell, M. (2012). A field assessment of a SIUC innovative spray system for continuous miners for dust control. 14th US/North American Mine Ventilation Symposium, Salt Lake City, Utah, June 17-20.
- Kollipara, V.K., Relangi, D.D., & Chugh, Y.P. (2012). A CFD analysis of airflow patterns in the face area for continuous miner making a straight initial cut. 14th US/North American Mine Ventilation Symposium, Salt Lake City, Utah, June 17-20.
- Kollipara, V.K., Relangi, D.D., & Chugh, Y.P. (2012). A CFD modeling study of SIUC innovative spray system for continuous miner for efficient dust control.

- Kollipara, V.K., Relangi, D.D., & Chugh, Y.P. (2012). An experimental study of approaches to minimize pressure loss within wet scrubber and their effect on coal dust control. 14th US/North American Mine Ventilation Symposium, Salt Lake City, Utah, June 17-20.
- Chugh, Y.P., Gurley, H., & Kollipara, V.K. (2012). A field assessment of an SIUC innovative spray system for continuous miners. Society for Mining, Metallurgy, and Exploration Annual Meeting, Seattle, WA, February 19-22.
- Kollipara, V.K., Chugh, Y.P., & Relangi, D.D. (2012). A CFD modeling of airflow patterns in face area for continuous miner making a right turn cut. Society for Mining, Metallurgy, and Exploration Annual Meeting, Seattle, WA, February 19-22.
- Mondal, K., Chugh, Y.P., Relangi, D.D., Bariair, B., & Kollipara, V.K. (2012). Coal dust wettability: it's role in dust control and its determination. Society for Mining, Metallurgy, and Exploration Annual Meeting, Seattle, WA, February 19-22.
- Kollipara, V.K., & Chugh, Y.P. (2011). CFD modeling of dust dispersion in mine airways. Society of Mining Engineers Annual Meeting. Denver, Colorado, February 27- March 02.
- Chugh, Y.P., Mondal, K., Kollipara, V.K., Gurley, G., Yerram, R., & Relangi, D.D. (2011). Characterization of coal and quartz dust in interior basin coal mines. Society of Mining Engineers Annual Meeting. Denver, Colorado, February 27- March 02.
- Kantipudi, R., Chugh, Y.P., Kollipara, V.K. (2011). Effect of wet-scrubber operation on airflow patterns and dust control within a continuous miner face area: CFD analysis. 34th International Conference of Safety in Mines Research Institutes. New Delhi, India, December 7-10.
- Chugh, Y.P., Mondal, K., Kollipara, V.K., Gurley, H., Relangi, D.D., & Hirschi, J. (2011). Characterization of coal and quartz dust from an Indiana mine. Proceedings of Pittsburgh Coal Conference. Pittsburgh, Pennsylvania, September 12-15.

2001-2010

- Kollipara, V.K., & Chugh, Y.P. (2010). A numerical analysis of the mine ventilation performance of selected tail-gate entry supports. 13th United States/North American Mine Ventilation Symposium, June 13-17, Sudbury, Ontario, Canada.
- Chugh YP, Gurley H, Kollipara VK, Pulliam J: [2010] Field demonstration of Novel Dust Control Concepts for Mine Roadways and Continuous Miners. Illinois Clean Coal Institute Project Number: 08-1/3.1D-3.
- Chugh, Y.P. and Gurley, H., 2010. "An Analysis of the Dust Sampling Data Base from MSHA." Internal Research Report, March
- Kantipudi, R., Nsofor, E.C, Chugh, Y.P., & Kollipara, V.K. (2009). CFD modeling of air flow distribution around a Room and Pillar Mining face area. 9th International Mine Ventilation Congress, New Delhi, India, November.
- Chugh YP, Patwardhan A, Gurley H, Hirschi J: [2009] Field Evaluation of Continuous Miner Chassis Spray System for Dust Control. International Mine Ventilation Congress, 759-768.
- Chugh, Y.P, A. Patwardhan, H. Gurley, and R. Carty (2008), Air Filtration Technology for Dust Control in Room-and-Pillar Mining," US/North America Mine Ventilation Conference, University of Nevada, Reno, June 2008,
- Chugh, Y.P, A. Patwardhan, H. Gurley, and R. Carty (2008), Dust Control in room-and-Pillar Mining Using Continuous Miners: Additional Evaluations," US/North America Mine Ventilation Conference, University of Nevada, Reno, June 2008

- Chugh, Y.P., Amit Patwardhan, H. Gurley, A. Moharana (2007), “An Evaluation of Selected Novel Dust Control Concepts in room-and Pillar Mining”, 16th International MPES Conference, Bangkok, Thailand, December 11-13, 2007.
- Chugh YP, Patwardhan A, Gurley H, Moharana A, Pulliam J, Saha R, Bell W: [2006] A Field Demonstration of a Joy Wet-Head Miner in Illinois. Illinois Clean Coal Institute, Project number: 04-1/US-2.
- Chugh, YP, Patwardhan A, Gurley H, Carty R: [2006] A Field Demonstration of an Innovative Spray System on the Continuous Miner for Dust Control. Proc. of 11th United States/North American Mine Ventilation Symposium. M. Mutmanský and Raja V. Ramani (eds.) Taylor and Francis Group, London. ISBN 0-415-40148-8, 217-224.
- Chugh, Y. P., A. Patwardhan, H. Gurley, A. Moharana, and R. Carty. 2006a. “A Field Demonstration of the Joy Wet-Head Miner Technology for Dust Control.” In Proceedings of 11 U.S./North American Mine Ventilation Symposium, eds. J.M. Mutmanský and R.V. Ramani, pp. 217-224. Taylor & Francis, UK.
- Chugh, Y. P., Alam, M., Patwardhan, A., and Thatavarthy, K. K., 2005, “A Field Demonstration of a Modified Wet Scrubber for Dust Control in an Illinois Coal Mine”, Proceedings, 8th International Mine Ventilation Congress, July 6-8, Brisbane, Australia, Editor: A. D. S. Gillies, Publisher: The Australasian Institute of Mining and Metallurgy, Carlton Victoria, Australia, ISBN 1-920806-33-4, pp. 143-150.
- Chugh YP, Thatavarthy KK, Patwardhan A: [2004] Development of a Wettability Test for Assessing Effectiveness of Surfactants for Dust Control. Proc. of 10th United States/North American Mine Ventilation Symposium, Anchorage, Alaska
- Chugh, Y.P., Thatavarthy, K.K., Carty, R 2004 “An assessment of a two-filter concept for a continuous miner wet scrubber” 10th US/North American Mine Ventilation Symposium, ed. R.Ganguly and S. Bandopadhyay, 16 – 19 May 2004, Anchorage, Alaska.
- Chugh, Y.P., Thatavarthy, K.K., Carty, R 2004 “An assessment of a two-filter concept for a continuous miner wet scrubber” In proceedings of the 10th U.S/North American Mine Ventilation Symposium, ed. R.Ganguly and S. Bandopadhyay, 16 – 19 May 2004, Anchorage, Alaska. pp 253-261
- Chugh, Y. P., K.K. Thatavarthy, and R. Carty. 2004a. “Identifying Improvements for a Modified Wet Scrubber through Simplified Modeling.” In Proceedings of 10 U.S./North American Mine Ventilation Symposium, eds. R. Ganguli and S. Bandopadhyay, pp. 389-396.
- Hirschi, J.C., Y.P. Chugh, A. Saha, M. Mohanty, (2002), “Developing a Laboratory for Assessing Continuous Miner Scrubber Efficiency and Preliminary Results”, The North American 9th Mine Ventilation Symposium, June

Combustion By-products, Mining and Processing Related

2011-Till Date

- Chugh, Y. P, B. Schladweiler, and C. Skilbred (2023) ^{Sustainable} and Responsible Mining Through Sound Mine Closure”, Accepted for publication in the International Journal of Mining Science and Technology, Springer
- Behum, Paul, Y. P. Chugh, and L. Lefticariu (2017), Management of Coal Processing Wastes: Studies on an Alternate Technology for Control of Sulfate and Chloride Discharge”, Int. J. Mining Science and Technology”, Published.

- Hu, Z, R. Zhang, Y. P. Chugh, and Jia Jia (2015), "Mitigating mine subsidence dynamically to minimize impacts on farmland and water resources-a case study", International Journal of Environment and Pollution, Currently in review.
- Chugh, Y. P., H. Gurley (2013), "Effects of out-of-Seam dilution on production, processing, environment and cost," International Mineral Processing Technology 2013, Bhubneswar, December. (Invited Keynote Speaker)

2001-2010

- Patwardhan, A, Chugh, Y.P., A. Moharana, and J. Hirschi (2010), "Cost and Environmental Impact of Out-of-Seam Dilution on Clean Coal", International Coal Preparation Congress, Lexington, KY April 20-25, 2010.
- Chugh, Y.P (2009), Global Sustainable energy Development: A Review of Different Options", International Conference on Energy Conversion and Management, Eds. S. K. Shukla and J.V. Tirkey, pp 275-286.
- (Several coauthors, including Y.P. Chugh)-"Sustainable Coal Development in China" October 2009, Highly Peer Reviewed, about 110 pp in the form of a book.
- Chugh, Y.P. "Coal Waste Management Practices in the USA", a Chapter in the above final report. October 2009.
- Behum, Paul T., Y. P. Chugh, Y. Teklehaimanot, L. Lefticariu (2009), Geochemistry of Coal Processing Facility Drainage: Preliminary Results of Kinetic Testing", Geological Society of America, North Central section, 42nd Annual Meeting, April 2 - 6, 2009, Dekalb, Illinois (Power point submission)
- Lefticariu, L, Paul T. Behum, Y. P. Chugh (2009), Geochemistry of Coal Processing Facility Drainage: Preliminary Results for Kinetic Testing", (2009) GoldSchmidt Conference, June 21-26, 2009, Davos, Switzerland. (Power point submission)
- Chugh, Y.P., P. Behum, J. Nawrot, S. Mohanty (2007), Identification of Good Management Practices in Illinois to Control Sulfate and Chloride Discharges: An Overview", 16th International MPES Conference, Bangkok, Thailand, December 11-13, 2007.
- Mohanty, Manoj, Yoginder P. Chugh and Satya Harpalani (2007), Mining/Mineral Engineering Education on the Job: A New Concept, ASEE paper # 98, Indianapolis
- Patwardhan, Amit, A. Moharana, Y.P. Chugh (2007), "Impacts of out of seam dilution on clean coal quality", 16th International MPES Conference, Bangkok, Thailand, December 11-13, 2007.
- Patwardhan, A., Chugh, Y. P., Arnold, B. J. and Terblanche, N., 2006, "Demonstration of a Filter Press for Efficient Fine Particle Dewatering", Coal Preparation Journal, Vol. 26, No. 1, pp. 33-54.
- Patwardhan, A. and Chugh, Y. P., 2005, "Commercially Viable Strategies for Enhancing Coal Quality", Coal Preparation, Vol. 25, No. 4, pp. 175-192.
- Chugh, Y.P. 2006, "NAS Final Report: Managing Coal Combustion Residues in Mines- A Review", OSM Interactive Forum, Columbus, Ohio, November 2006.
- Moharana, A., Chugh, Y. P. and Patwardhan, A., 2006, "Assessment and Control of Out-of-Seam Dilution Impacts in Room-and-Pillar Mining Operations", Mine Planning and Equipment Selection, M. CVardu, R. Ciccu, E. Lovera and E. Michelotti (eds.), ISBN 889013424-0, Vol. 1, pp. 45-50.

- Patwardhan, A., Chugh, Y. P., Arnold, B. J. and Terblanche, N., (2005), "Demonstration of a Filter Press for Efficient Fine Particle Dewatering", Coal Preparation Journal, October- December.
- Patwardhan, A. and Chugh, Y. P., (2005), "Commercially Viable Strategies for Enhancing Coal Quality", Coal Preparation Journal, October- December.
- Chugh, Y.P., Indranil De, Eric Powell, (2005) "A Model Study for Blind Pneumatic Backfilling of Fly Ash in Abandoned Underground Mines", International Journal of Surface Mining, December.
- Chugh, Y. P., Patwardhan, A. and Moharana A., 2005, "Optimizing Continuous Miner Coal Production Systems Based on Production and Production Cost", Fourteenth International Symposium on Mine Planning and Equipment Selection (MPES 2005) and the Fifth International Conference on Computer Applications in the Minerals Industries (CAMI 2005). October 31-November 3, 2005, Banff, Canada, Mine Planning and Computer Applications in the Minerals Industries, Raj K. Singhal, Kostas Fytas and Chris Chivetelu (eds.), Publisher: The Reading Matrix Inc., Irvine, CA, USA, ISSN 1712-3208, pp. 1607-1620.
- Chugh, Y. P., Moharana A. and Patwardhan, A., 2005, "Development of Simple Production Modeling Software for Continuous Miner Production Systems", Fourteenth International Symposium on Mine Planning and Equipment Selection (MPES 2005) and the Fifth International Conference on Computer Applications in the Minerals Industries (CAMI 2005), October 31-November 3, 2005, Banff, Canada, Raj K. Singhal, Kostas Fytas and Chris Chivetelu (eds.), Publisher: The Reading Matrix Inc., Irvine, CA, USA, ISSN 1712-3208, pp. 1513-1527.
- Chugh, Y. P., Moharana A. and Patwardhan, A., 2005, "Dilution in Underground Coal Mining in USA – Impacts on Production, Processing and Waste Disposal", (Keynote Address), Proceedings, International Seminar on Mineral Processing Technology (MPT-2005), January 6-8, Editors: R. Venugopal, T. Sharma, V. K. Saxena and N. R. Mandre, Publisher: Tata McGraw Hill Companies, New Delhi, India, ISBN 0-07-059921-1, pp. 10-20.
- Vories, K., and Y.P. Chugh (2005), "Mine placement of coal combustion byproducts: An overview of regulation and technical issues," International Fly Ash Congress, December 4-7, New Delhi, India.
- Chugh, Y.P., and S. Mohanty (2005), "A Field Demonstration of an Unstabilized F-Fly Ash-Based Road Subbase," International Fly Ash Congress, December 4-7, New Delhi, India.
- Ziemkiewicz, P., A. Knox, and Y.P. Chugh (2005), "Fluidized bed combustion ash placement in coal mines for acid mine drainage control," International Fly Ash Congress, December 4-7, New Delhi, India.
- Chugh, Y.P., A. Moharana, and A. Patwardhan (2005), "Development of Simple Production Modeling Software for Continuous Mining," MPES 2005 International Symposium on Mine Planning and Equipment Selection, Banff, Canada, November 1-3.
- Chugh, Y.P., A. Patwardhan, and A. Moharana (2005), "Optimizing Continuous Miner Coal Production Systems Based on Production and Production Cost," MPES International Symposium on Mine Planning and Equipment Selection, Banff, Canada, November 1-3.
- Patwardhan, A., Chugh, Y. P., Arnold, B. J. and Terblanche, N., (2004) "In-plant Testing of the T. H. Filter Press for Dewatering Ultra-fine Clean Coal", World Coal., December 2004, pp 49-53, (Invited article)

- Chugh, Y. P. and Patwardhan, A., (2004), "Mine-mouth Power and Process Steam Generation Using Fine Coal Waste Fuel", *Resources, Conservation and Recycling Journal*, Vol. 40, No. 3, pp. 201-223.
- Patwardhan, A., Chugh, Y. P., Arnold, B. J. and Terblanche, N., (2004) "In-plant Testing of the T. H. Filter Press for Dewatering Ultra-fine Clean Coal", *World Coal*, December, pp 49-53
- Chugh, Y. P. and Patwardhan, A., (2004), "Mine-mouth Power and Process Steam Generation Using Fine Coal Waste Fuel", *Resources, Conservation and Recycling Journal*, Vol. 40, No. 3, pp. 201-223.
- Patwardhan, A. and Chugh, Y. P., (2004), "Commercially Viable Strategies for Enhancing Coal Quality", *Proceedings, Twenty-First Annual International Pittsburgh Coal Conference*, September 13-17, Osaka, Japan, Editor: Badie I Morisi, ISBN 1-890977-21-7.
- Patwardhan, A., Chugh, Y. P., Arnold, B. J. and Terblanche, N., (2004), "Demonstration of a Filter Press for Efficient Fine Particle Dewatering", *Proceedings, Twenty-First Annual International Pittsburgh Coal Conference*, September 13-17, Osaka, Japan, Editor: Badie I Morisi, ISBN 1-890977-21-7.
- Chugh, Y. P., Moharana, A., and Patwardhan, A., (2004), "An Analysis of the Effect of Out-of-Seam Dilution on Coal Utilization", *Proceedings of the VI International Conference on Clean Coal Technologies for the Mining Industry*, University of Concepción, Chile, 18-21 April.
- Patwardhan, A., Chugh, Y. P., Mohanty, M. K., and Sevim, H., (2003), "Comparative Economics of Advanced Fine Coal Cleaning in Refuse Pond Recovery and Active Mine Applications", *Minerals and Metallurgical Processing Journal*, Vol. 20, No. 3, pp. 113-119.
- Chugh, Y. P., Patwardhan, A. and Barnwal, J. P., (2003), "Meeting Processing Challenges in Clean Coal Utilization", *Journal of Mines, Metals and Fuels*, Vol. 51, No. 1, pp. 15-27.
- Chugh, Y.P., S. Sengupta, (2003) "Development of Controlled Low Strength Materials Using large Volume Coal Combustion Byproducts", *Society for Mining, Metallurgy, and Exploration, Inc. Transactions*, Volume 314, pp 129-137,
- Chugh, Y.P., (2003), "Stabilization of coal wastes and coal combustion byproducts", U.S. Patent and Trademark Office, Patent No. 6,554,888, April 29.
- Chugh, Y. P. and Patwardhan, A., (2003), "Assessing Role of Coal Processing in Clean Coal Utilization", *Proceedings, 28th International Technical Conference on Coal Utilization & Fuel Systems*, Editor: B. A. Sakkestad, Publisher: Coal Technology Association, Gaithersburg, MD. ISBN 0-932066-28-04, pp. 816-827.
- Chugh, Y.P., S. Mohanty, and C. Hance, (2003), *Development and Demonstration of Coal Combustion Byproducts Based Road Subbase: Meredosia Industry Access Truck Route*, 15th International ACAA Symposium Paper 79-1
- Lufei, J, Anthony, E. J., Patwardhan, A. and Chugh, Y. P., (2003) "Combustion of Coal-Water Slurry in CFBC", *Fourth Asia-Pacific Conference on Combustion*, August 18-21, Nanjing, China.
- Chugh, Y.P., D. Deb, D. Biswas, (2003), "Underground Placement of Coal Processing Waste and Coal Combustion Byproducts Based Paste Backfill for Enhanced Mining Economics," *Proceedings 19th World Mining Congress*, Nov. 1-5, 2003. pp 1327-1342

- Chugh, Y.P., (2002) "Coal: An Affordable Clean Energy for the Near Future" Ibid, Keynote Address, International Conference on Challenges in Coal and Mineral Processing, Dhanbad, India, December.
- Patwardhan, A., Mondal, K., Chugh, Y. P., Ping, H. and Singh, N., (2002), "Fine Coal Dewatering Enhancement Using Mechanical Thermal Techniques", Proceedings, International Conference on Clean Coal Technologies for our Future, October 21-23, Chia Laguna, Sardinia, Italy, Editor: Robert M. Davidson, IEA Clean Coal Center, London, UK, ISBN 92-9029-377-2.
- Chugh, Y. P. and Patwardhan, A., (2002), "Techno-Economic Feasibility of Mine-Mouth Power and Process Steam Generation in a CFBC using Processing Plant Waste Fuel", Proceedings, International Conference on Clean Coal Technologies for our Future, October 21-23, Chia Laguna, Sardinia, Italy, Editor: Robert M. Davidson, IEA Clean Coal Center, London, UK, ISBN 92-9029-377-2.
- Chugh, Y. P. and Patwardhan, A., (2002), "Feasibility of Mine-Mouth Power Generation in a CFBC using Processing Plant Waste Fuel", Proceedings, Nineteenth Annual International Pittsburgh Coal Conference, Pittsburgh, PA, September 23-27, ISBN 1-890977-19-5.
- Chugh, Y. P. and Patwardhan, A., (2002), "Synergistic Mining, Processing, Power Generation and By-Products Management for Coal Utilization", Proceedings, 27th Technical Conference on Coal Utilization and Fuel Systems, Editor: B. A. Sakkestad, Publisher: Coal Technology Association, Gaithersburg, MD, ISBN 0-932066-27-03, pp. 1009-1020.
- Chugh, Y. P., Patwardhan, A., Patil, D. P., Honaker, R. Q., Parekh, B., K, Tao, D., Chen, Z. and Khan, L, (2002), "Integrated Carbon Recovery Systems for Refuse Pond Recovery", Proceedings, 27th Technical Conference on Coal Utilization and Fuel Systems, Editor: B. A. Sakkestad, Publisher: Coal Technology Association, Gaithersburg, MD, ISBN 0-932066-27-03, pp. 619-630.
- Chugh, Y.P., J.C. Hirschi, M. McGolden (2002), "Identification of Cost Cutting Strategies for Underground Coal Mines in Illinois" Proceedings, 27th Technical Conference on Coal Utilization and Fuel Systems, Editor: B. A. Sakkestad, Publisher: Coal Technology Association, Gaithersburg, MD, ISBN 0-932066-27-03,
- Buchanan, A and Y.P. Chugh, (2001), "Feasibility of Using Foliar Feeding for Direct Vegetation on Unconventional Soils" International Conference on Challenges in Coal and Mineral Beneficiation", p. 433-443, December.

Prior to 2000

- Chugh, Y.P. and I. Ehie, (1987), "An Evaluation of Selected Pit Configurations for Surface Mining a Moderately Pitching Coal Seam, "Transactions, Society of Mining Engineering, Annual Volume
- Chugh, Y.P. and R.D. Caudle (1986), "Computer-Aided Planning and Management of Surface Coal Mines," Proceedings Conference on Application of Computers in Open-Pit Mining, NeueBergbautechnik, 16 Jg, Hef. 5, May, pp. 179-182.
- Chugh, Y.P. and I. Ehie (1985), "An Evaluation of Selected Pit Configurations for Surface Mining a Moderately Pitching Coal Seam," Transactions of the Society of Mining Engineers, Denver, CO, Annual Volume
- Chugh, Y.P., J.E. Campbell and H. Parkinson (1983), "Application of Automated Miner-Bolter in Coal Mine Development," Transactions Society of Mining Engineers, Annual Volume

- Roethe, R. and Y. P. Chugh (1983), "Analysis of Productivity Trends at a Surface Coal Mine Utilizing a Shovel and Bucket Wheel Excavator," Transactions Society of Mining Engineers, Annual Volume
- Chugh, Y.P. and R. Kharkar (1982), "Environmental Assessment of Surface Coal Mining in the U.S.," Journal of Mines, Metals and Fuels, pp. 326-336, June.
- Chugh, Y.P., and A. Kundu (1980), "Coal Quality Changes During Slurry Transportation of Coal," Transactions of the Institution of Mining Engineers, Annual Volume
- Chugh, Y.P. and H. Parkinson (1981), "Automation Trends in the Room-and-Pillar continuous Mining Systems in the U.S.," South African Journal of Mining and Metallurgy, pp. 57-65, March.
- Chugh, Y.P. (1980), "Surface Mining of Minerals Using Draglines in the U.S.," Transactions Institution of Mining and Metallurgical Engineers, England, October.
- Chugh, Y.P., C.B. Raju, A. Patwardhan, (2000), "Development of an Innovative Approach for Management of Coal Processing Waste with Natural Resource Utilization Byproducts", Ibid. pp. 405-423.
- Chugh, Y.P., Debasis Deb, and Raju, C.B., (2000), "Physical and Engineering Properties of Coal Combustion By-Products", Coal Combustion By-Products Management Workshop, Office of Surface Mining/U.S. Department of Energy, Morgantown, W.V., April. pp 26-37
- Chugh, Y.P., Prichard, M., Deb, D., and Wilcox, H., (2000), "Development and Demonstration of CCBs Based Structural Products for Mine Use", Ibid. pp95-105
- Chugh, Y.P., Deb, D., Dutta, D., Caldwell, M., (2000), "Underground Placement of Coal Processing Waste and Coal Combustion By-Products Based Paste Backfill for Enhanced Mining Economics", Ibid. pp 143-150
- Chugh, Y.P., D. Deb, D. Dutta, M. Caldwell, (2000), "SIU Backfills with CCBs and Coal Processing Waste Mixture", Coal Age, November, pp28-30.
- Chugh, Y.P., H. Sevim and S. Renninger, (1998), "Management of Coal Combustion By-Products: An Overview," Fifth International Symposium on Environmental Issues and Waste Management in Energy and Mineral Production, May 18-20.
- Chugh, Y.P. and G. Wangler, (1998), "Total Health and Safety Management in Minerals Industries," Fifth International Symposium on Environmental Issues and Waste Management in Energy and Mineral Production, May 18-20.
- Chugh, Y.P. and D. Dutta. (1998), "The Injection of Coal Combustion By-Products into Mines for Disposal, Subsidence Stabilization, and Acid Mine Drainage Remediation." The 15th National Meeting of The American Society for Surface Mining and Reclamation, May 17-22, St. Louis, MO.
- Chugh, Y.P. et.al. (1997) "Total Health and Safety Management in Coal Mines." USAID Conference on Mine Health and Safety Issues, Katowice, Poland (In Polish).
- Chugh, Y.P., et.al. (1997) "A Case for Mineral Resources Engineering Curriculum." Progress through Partnership"; ICEE Conference, Eds. D. Throgmorton, et.al August 13-15.
- Chugh, P., B. Paul, S. Esling, H. Sevim, T. McDonald, D. Dutta, and E. Thomasson, (1997), "Field scale hydraulic and pneumatic coal combustion byproduct injection-Part II," Proceedings of the Int. Ash Utilization Symposium, October, 20-22, Lexington, Kentucky.
- Chugh, Y.P. et. al. (1997) "Field Scale Hydraulic and Pneumatic Coal Combustion By-Product Injection." 1997 International Ash Utilization Symposium, October 20-22, Lexington, KY. pp 483-494.

- Chugh, Y.P., Guolin Yang, Yuan Xiao, and G. Cockrum, (1996), "Development of Alternative Room-and-Pillar Geometries Based on Rock Mechanics And Reliability Principles," Proc. of the Fourteenth Annual Workshop of Generic Mineral Technology Center, Pittsburgh, PA. October.
- Chugh, Y.P., (1992), "Industry/University/Government Cooperative Research Program for Disposal and Utilization of Coal Combustion Residues from Illinois Coal Basin Users," Proc. 14th Annual Abandoned Mined Land Conference, Chicago, IL, August 23-27 pp. 31-49.
- R. Mu, V.M. Malhotra, Y.P. Chugh, (1987) "Effects of Heavy Crude Oil Treatment on the Surface Wetting Properties of Coal," Processing and Utilization of High Sulfur Coals II, Y. P. Chugh and R. D. Caudle, Editors, Elsevier Science Publishers, pp. 94-106.
- Chugh, Y.P. and K.V.K. Prasad (1985), "Selection of Soil Loosening Equipment for Alleviation of Soil Compaction Problem in Land Reclamation," Proceedings Mining Equipment Selection Symposium, Calgary, Alberta, pp. 1-19, Session III, November.
- Chugh, Y.P. and S. L. Barua (1981), "Planning Integrated Mining and Reclamation," Symposium on Surface Mining, Hydrology and Sedimentology, Proceedings of 1981 Annual Symposium, Lexington, KY, pp. 5-11, December.
- Chugh, Y.P. and G. Heidinger (1980), "Size Distribution and Coal Quality of Refuse from Southern Illinois," Coal Mining and Processing, p. 84-87, September.
- Chugh, Y.P., J. Campbell and H. Parkinson (1979), "Production Potential of Miner-Bolter Continuous Mining Systems," Proceedings 16th International Symposium on Operations Research and Computers in the Mineral Industry, p. 414, October.

C. Research Reports

- Over 250 reports to State and Federal agencies and industry based on completed research projects.

D. Papers and Presentations at Professional Meetings

- At least three hundred (300) oral technical presentations at national and international conferences in USA and abroad.
- At least twelve (15) Keynote technical lectures at International Conferences
- S.K. Bose Memorial Lecture at the Indian School of Mines, Highly prestigious

APPENDIX II

SERVICE-RELATED INFORMATION

A. College and University (Selected)

- Internal Review Committee, Technology Department, 1978-1980.
- Committee to prepare Bachelor of Mining Engineering Program Proposal for the College of Engineering and Technology, 1977-1978.
- Member, Mining Faculty Search Committee, 1978, 1981, 1984, 1988, 1989.
- Chairperson, Search Committee for Chairman of Department of Mining Engineering, 1979.
- Salary Grievance Committee, Office of the Vice President of Academic Affairs and Research, 1979.
- Chairperson, Engineering Unit Committee of the Curriculum Committee, 1979-1980.
- Faculty Advisor, Society of Geologists and Mining Engineers, 1977-1978, Best Student Chapter Award by SME.
- Faculty Advisor, Society of Geologists and Mining Engineers, 1980-1984, 1990.
- Internal Review Committee, Department of Finance, 1981-1982.
- Curriculum Committee, 1981-1983.
- Chairperson, Ad-Hoc Doctoral Program Committee, 1983-1984, 1984-1985, 1985-1986.
- Chairperson, Faculty Affairs Committee, 1984-1985.
- Member, Advisory Board, Office of International Programs and Services, 1986, 1987.
- Member, Outstanding Scholar Award Committee, 1990.
- Member, College of Engineering Promotion and Tenure Committee, 1992, 1993, 2000-2005.
- Member, College of Business and Administration Promotion and Tenure, 1993.
- College Faculty Affairs committee, 2000-2005
- College PhD Committee, 2006 to Present
- Acting Chair, Mining and Mineral Resources Engineering, January 2008 to June 30, 2008
- Internal Review Committee, Department of Physics, February 2010.
- Chair Search Committee, Mining and Mineral Resources Engineering, 2012 (Member)
- PhD Committee, College of Engineering, 2015-

B. Professional Organizations (Selected)

- Secretary-Treasurer, Illinois Mining Institute, 1997- 2010
- Honor Certificate from Society of Mining Engineers for enrolling new members, 1975.
- Chairman of Publications for the Rock Mechanics Unit, Committee of the Society of Mining Engineers (AIME), 1978-1979.
- Chairman, Program Planning, Rock Mechanics Unit Committee of the Society of Mining Engineers, 1979-1980.
- Chairman, Rock Mechanics Unit Committee of the Society of Mining Engineers, 1980-1982.

- Chairman, Publications, Geological Engineering Unit Committee of the Society of Mining Engineers, 1979-1980.
- Member, Publications Committee, Society of Mining Engineers, 1982.
- Chairman, Surface Mining Committee, SME-AIME, 1985.
- Chairman, Illinois Mining Institute Scholarship Committee, 1985, 1986, 1987
- Member, 1988, 1989.
- Chairman, SME-AIME Scholarship Committee, 1988-1989.
- Chair, Educational Issues Committee, 1990-1991.
- Member, Finance Committee, ABET Board of Directors, 1990-1991.
- Member, Executive Board, Illinois Mining Institute, 1990-1993, 1996-Present.
- Honorary Member, China Coal Society, 1995.
- Member, ABET Board of Directors
- Alternate Director, Technology Accreditation Commission

C. Professional Organizations (Major Only)

- Chairman, Rock Mechanics Unit Committee of the Society of Mining Engineers, 1980 1982.
- Member, Publications Committee, Society of Mining Engineers, 1982.
- Chairman, Surface Mining Committee, SME-AIME, 1985.
- Chairman, SME-AIME Scholarship Committee, 1988 1989.
- Chair, Educational Issues Committee, 1990 1991.
- Member, Executive Board, Illinois Mining Institute, 1990-1993, 1996-1998
- Secretary-Treasurer, Illinois Mining Institute, 1997- 2010
- Member, ABET Board of Directors, 1990s.

APPENDIX III

ADMINISTRATION RELATED

- Developed a new Department of Mining Engineering at Southern Illinois University to a unit with five continuing faculty members, an accredited BS program in mining engineering with good stable undergraduate enrollment, excellent laboratory facilities, over \$700,000 annually in external research funds, 4-6 post-doctoral researchers, 6-8 field research staff, and 15 graduate students. The Department had a very active 22-member industrial advisory board.
- Led the Department through four (4) ABET reviews and two Internal and External Reviews.
- Developed extensive mining industry, state and federal agency interactions for the department.
- Chairman, Ad-Hoc Committee to develop the Ph.D. program in Engineering Science in the College of Engineering at SIUC (1983-1985). Successfully launched the Ph.D. program in 1985.

- Team leader to develop recommendations and implementation plans for offering university curricula in mining engineering and geology with a coal emphasis for selected universities in Indonesia under a World Bank contract, 1988.
- Assisted in the development of an NSF Engineering Research Center proposal for the SIUC College of Engineering, 1988.
- Assisted in the development of a collaborative (West Virginia University, University of North Dakota, and SIUC) research program for the National Mine Land Reclamation. The Center was approved in February 1998.
- Developed an Industry/University/Government co-operative research program on “Coal Combustion Residues Management Program” with an annual funding of \$300K per year from the State of Illinois effective July 1, 1991. Appointed Program Director, July, 1991.
- Developed a 3-million-dollar Industry/University/Government cooperative agreement for an interdisciplinary research program on “Management of Dry FGD By-Products in Underground Mines” with USDOE, 1993. The total cost of the program was about five million dollars. The program involved researchers from Mining Engineering, Civil Engineering, Geology, State Geological Survey, and subcontractors from all over the USA.
- Developed highly successful ongoing cooperative exchange agreements between Southern Illinois University, China University of Mining and Technology, Wroclaw Technical University (Poland), and Central Mining Research Institute (India), 1978-1998.
- Launched 2+2 program with Johan A. Logan College in 1994 for manpower needs of coal industry. Developed a similar program with the College of Dupage, Chicago to support manpower needs of limestone industry.
- Launched an innovative cooperative MS Program in Mining Engineering with China University of Mining and Technology and China Coal Research Institute effective fall 1998.
- Established “Peabody Longwall Ground Control Laboratory” in the E-wing of the Engineering Building with a \$75,000 donation from the company, 1997-1998.
- Actively participated in the “Engineering the Future” campaign for the College of Engineering to develop about 30% of the total campaign contributions (\$1.5 million), 1997-1998.
- Developed cooperative relations with the Illinois Department of Transportation, Illinois Ready-Mix Concrete Association, and the Illinois Association of Aggregate Producers, 1984-1998.
- Implemented, along with faculty and administration, a name changes for the Department from “Mining Engineering” to “Mining and Mineral Resources Engineering”, 1997-1998.
- Established SIU-Joy Dust Control Laboratory with two wet scrubbers from Joy Mining Machinery.
- Conceived an idea in 2003 for an innovative BS degree program (involving distance learning techniques) in cooperation with industry.

Research Administration and Selected Achievements

- Directed over 3.5-million-dollar research programs during the period of 1988-1994 as Director, Illinois Mining and Minerals Resources Research Institute and Technical Director, National Mine Land Reclamation Center- Midwestern Region.

- Successfully competed in the Mine Systems Design and Ground Control Center Research Program (federal government program) during 1985-1996 with a total funding of about \$875K.
- Actively participated in the Illinois Mine Subsidence Research Program during the period 1985-1992 attracting a total funding of about \$750K.
- Granted three six-week assignments by United Nations (1981, 1990, and 1993) to visit India and assist with Ground Control and Mine Subsidence Research.
- Four-week USAID/USDOE Assignment to assist India with fly ash utilization issues, March 1996.
- Two-week USAID assignment to Poland to assist with Mine Health and Safety Issues, June 1997.
- Developed procedures for the design of partial extraction mining systems for weak floor conditions. All mines in the region currently use the procedures to seek permits (1980-present).
- Assisted the State with characterization of mine subsidence impacts due to longwall and room-and-pillar mining. Coal companies utilize data for mine planning and design (1985-present).
- Developed and demonstrated technologies and procedures for effective management of coal combustion by-products in the Midwest (1991-present).
- Successfully developed and demonstrated a paste backfill technology for underground mines using coal combustion by-products, 1995-1997.
- Developed and demonstrated an innovative waste coal slurry management process that has significant potential for enhancing profitability in Illinois mines, 1996-1997.
- Developed and demonstrated lightweight fly ash-based structural materials to replace wood in mines, 1996-2002.
- Demonstrated an innovative paste backfill technology for enhancing profitability of Illinois mines in cooperation with Freeman United Coal Company (1997-2001).
- Designed an intermodal shipping container in cooperation with Wilson Manufacturing Company of Kentucky for handling fly ash from a power plant to a consumer center. The container will be loaded and unloaded at about 100 tons/hour. The container was successfully demonstrated in March 1999.
- Developed a pilot scale facility in 1999 for manufacturing and marketing fly ash based artificial supports for use in underground mines. The facility operated until 2003 and marketed cribs.
- Developed a fly ash-based utility pole in cooperation with Ashland Chemicals, and Trinity Industries with funds from Combustion Byproducts Recycling Consortium/ U.S. Department of Energy (2000-2003). This project is scheduled for commercialization in 2005 with support from Ashland Chemicals, and Trinity Industries in Paducah, KY.
- Developed an Advanced Mining Technologies research program for the State of Illinois in cooperation with mining industry in 2000. The State of Illinois has funded it for five years with funding of about \$250,000 per year. With matching support from coal companies, this program has a value of about \$750,000 per year.
- Received an additional \$250,000 for research in this area in 2007.
- Developed "Coal Mine Dust Control" research program from scratch in 2003 to a current level of about \$ 200,000 per year and two awarded patents that have been commercialized.