



Department: School of Resources and Environmental Engineering  
Professional field: Safety Engineering  
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## Profile

SUN Dongliang, male, Doctor of engineering, associate professor, master supervisor. Member of undergraduate teaching supervision group of college in the field of resources and environmental engineering, and director of youth teachers fellowship association. Secretary of environmental science and engineering committee of Shanghai Chemistry and Chemical Engineering; National second-level security assessor; National registered safety engineer; safe production standardization examiners.

Education experience:

- 09/2008 - 06/2011, Nanjing University of Technology, safety technology and engineering, doctor;
- 09/2006 - 06/2008, Nanjing University of Technology, security technology and engineering, advanced PhD;
- 09/2002- 06/2006, Nanjing University of Technology, bachelor of safety technology and engineering.

Scientific research and academic work experience:

- 07/2016-present: associate professor of safety engineering, department of environmental engineering, school of resources and environmental engineering, East China University of Science and Technology.
- 07/2013-06/2016, lecturer, safety engineering, department of environmental engineering, school of resources and environmental engineering, East China University of Science and Technology.
- 07/2011-06/2013, East China University of Science and Technology, post-doctoral research station of environmental science and engineering, post-doctoral teaching fellow.
- 09/2008-06/2011, Nanjing University of Technology, department of safety engineering, school of urban construction and safety engineering, PhD.
- 09/2006-06/2008, school of urban construction and safety engineering, Nanjing University of Technology, master of safety engineering.
- 2011/7-2013/7, East China University of Science and Technology, postdoctoral fellow, cooperative supervisor: Huang Guangtuan.

## Research Field

- Regional risk assessment, safety planning and emergency assistance decision-making;
- Risk assessment and control of domino effect of chemical accidents;
- Study on design safety spacing and layout of chemical industrial park;
- Study on safety risk ethics in chemical industrial park.

## Research results and selected published papers

Main research projects:

Scientific research (17 items) :

- Shanghai natural science foundation project, 16ZR1408500, study on protective mechanism of domino effect protective layer of explosive debris in storage tank, 2016/07 -- 2016/06, 200,000 yuan, in progress, presided over.
- R&d fund, b100-41901, product development of urban safety risk assessment system, May 2019 -- December 2019, 200,000 yuan, in research and in charge.
- Research and development project of Qingdao institute of safety engineering, sinopec, risk analysis and control of safety and environment of aromatics combined plant, 313038, 2013/01-2015/123 million yuan, concluded and participated.
- Special fund for exploration and research of basic scientific research operating expenses of east China university of science and technology, WB1314056, parameter impact analysis on the risk of chain effect of explosive fragments in chemical storage tanks, 2013/07-2015/06, 120,000 yuan, concluded and presided over.
- China postdoctoral science foundation, 2012M520851, research on control technology of the risk of chain effect of explosive debris in chemical storage tanks, 2012/01-2013/12.50 million yuan, concluded and presided over.
- National natural science foundation of China, 71001051, study on risk assessment and control of chain accidents in chemical process units based on essential safety, 2011/01-2013/12, 177,000 yuan, completed and participated.
- National natural science foundation of China, 50904037, research on gas leakage mechanism and safety design method of connected device, 2010/01-2012/12, 200,000rmb, completed, participated.
- Horizontal research and development project of nanjing safety supervision bureau of jiangsu province, regional risk evaluation system, May 2010-may 2011, 51.3 million yuan, completed and participated in.
- Jiangsu province science and technology plan project, BE2008605, r&d and demonstration of safety production management, monitoring and early warning, and emergency treatment technology for chemical enterprises, 2009/01-2010/12, 200,000 yuan, concluded and participated.
- Research and innovation program for postgraduates in jiangsu province, CX09B\_142Z, study on the mechanism of chain damage of chemical plant under the action of fire, 2009/01-2010/1230,000rmb, concluded and presided over.
- Horizontal research and development project of work safety supervision bureau of kunshan city, Jiangsu province, interactive urban major hazard source risk management system based on multi-technology integration, 10/2008-01/2011, 5 million yuan, completed and participated in.
- Project of the national science and technology support plan of the 11th five-year plan, 2006bak01b03-3, research on the simulation and response of hazardous chemical leakage and diffusion accidents and auxiliary decision support technology based on GIS and real-time meteorological information, 2008/01-2010/12, 450 thousand yuan, completed and participated;
- Shanghai university teachers production, study, research and practice project, 2014.6 -- 2015.6, 30,000, presided over, concluded;
- Research and development fund of nanjing anyuan technology co., LTD. : research and development of quantitative risk assessment system of chemical accident domino effect, December 2014 -- April 2015, 200,000 yuan, in charge of research;
- Research and development fund of xishi pharmaceutical packaging (China) co, LTD. : determination of water quality of high concentration cleaning wastewater, June, 2015 -- December, 2015, 60000, presided over, the project has been concluded;
- East China university of science and technology basic scientific research operating expenses interdisciplinary and major project cultivation fund: environmental chemical pollutants complex interface collaborative exposure risk mechanism and emergency response, December 2011 -- November 2015, 400,000 yuan, participation, completed;
- Science and technology project of Shanghai solid waste management center: pilot work of statistical investigation on enterprises producing and using environmental hormone chemicals in typical regions of Shanghai, Nov. 2015-jun. 2016, 180,000, participated in and under research.\

Main research papers (25) :

- [1] Sun D L, Jiang J C\*, Zhang M G, Wang A R, Huang G T, Qiao J J, Parametric approach of the domino effect for structural fragments, Journal of Loss Prevention in the Process Industries, 2012, 25 (1): 114 ~ 126 (SCI)
- [2] Sun D L, Huang G T\*, Jiang J C, Zhang M G, Wang Z R, Influence of the Protective Layer of Improved Polycarbonate on Domino Effect Risk Caused by Fragments, Research Journal of Chemistry and Environment, 2012, 16(S1): 39 ~ 45 (SCI)
- [3] Sun D L\*, Jiang J C, Zhang M G, Wang Z R, Ballistic experiments on the mechanism of protective layer against domino effect caused by projectiles, Journal of Loss Prevention in the Process Industries, 2016, 40: 17 ~ 28 (SCI)
- [4] Sun D L\*, Jiang J C, Zhang M G, Wang Z R, Influence of the source size on domino effect risk caused by fragments, Journal of Loss Prevention in the Process Industries, 2015, 35: 211 ~ 223 (SCI)
- [5] Sun D L\*, Jiang J C, Zhang M G, Wang Z R, Zhang Y N, Cai L W, Investigation of multiple domino scenarios caused by fragments, Journal of Loss Prevention in the Process Industries, 2016, 40: 591 ~ 602 (SCI)
- [6] Sun D L\*, Jiang J C, Zhang M G, Wang Z R, Zhang Y N, Yan L, Zhang H, Du X X, Zou Y S, Investigation on the approach of intercepting fragments generated by vessel explosion using barrier net, Journal of Loss Prevention in the Process Industries, 2017, 49: 989 ~ 996 (SCI)
- [7] Sun D L\*, Sun J H, Li Z J, Jiang J C, Zhang M G, Wang Z R, Investigation of the influence of the projected proportion of a burst vessel on the hazard caused by fragments, Journal of Loss Prevention in the Process Industries, 2019 (SCI, In Press)
- [8] Sun D L\*, Jiang J C, Zhang M G, Wang Z R, Xu M J, Zhang Y N, Yan L, Zhang H, Du X X, Zou Y S, Evaluation of the explosion energy of vessel based on the fragments characteristics on the accident site, Journal of Loss Prevention in the Process Industries(submitted) (SCI)
- [9] Sun D L\*, Jiang J C, Zhang M G, Wang Z R, Influence of the Cylindrical Source Size on Impact Probability Caused by Fragments, Procedia Engineering, 2014, 84: 786 ~ 795 (EI)
- [10] Sun D L, Jiang J C\*, Zhang M G, Wang Z R, Study on Impact Probability between Fragments from Spherical Vessel Explosion and Cylindrical Tank, Journal of Northeastern University (natural science), 2011, 32 (S2) : 27 ~ 33, 40 (EI)
- [11] Sun D L, Jiang J C\*, Zhang M G, Wang Z R, Effect of baffle and protective layer on the probability of chain damage of explosive fragments in spherical tank, Journal of chemical industry, 2011, 62 (S1): 208 ~ 214 (EI)
- [12] Sun D L, Jiang J C\*, Zhang M G, Wang Z R, Probability distribution of the number of explosive fragments in a horizontal tank based on the maximum entropy principle, Journal of chemical industry, 2011, 62 (S1): 219 ~ 224 (EI)
- [13] Sun D L, Jiang J C\*, Zhang M G, Wang Z R, Investigation on Impact Probability between Fragments from Horizontal Cylindrical Vessel Explosion and Spherical Objective, 2010 International Symposium on Safety Science and Technology, Hangzhou, P.R. China, 2010.10.22-10.25: 1296 ~ 1302 (ISTP)
- [14] Sun D L, Jiang J C\*, Zhang M G, Wang Z R, Study on Impact Probability between Fragments from Spherical Vessel Explosion and Cylindrical Tank, 2010 International Colloquium on Safety Science and Technology, Shenyang, P.R. China, 2010.9.25-9.27: 704 ~ 710
- [15] Sun D L, Jiang J C\*, Zhang M G, Wang Z R, Impact probability analysis of debris ejection from cylindrical tank explosion, 2010 national symposium on innovation and development of safety science and technology & BBS papers for doctoral students of safety science and technology in jiangsu province, Nanjing, China, 2010.11.13-11.14: 9 ~ 15
- [16] Sun D L, Huang G T\*, Jiang J C, Zhang M G, Wang Z R, Monte-Carlo Approach of Ground Distribution for Structural Fragments, Procedia Engineering, 2012, 37(7): 348 ~ 353 (EI)
- [17] Sun D L, Huang G T\*, Jiang J C, Zhang M G, Wang Z R, Reduction effect of the clapboard of polyphenylene oxide on domino effect risk caused by fragments, Journal of Convergence Information Technology, 2013, 8(1): 388 ~ 393 (EI)
- [18] Sun D L, Huang G T\*, Jiang J C, Zhang M G, Wang Z R, The influence of calculation parameters on the thickness of PVC resin anti-debris protective layer, Journal of Northeastern University (natural science), 2013, 34 (S1) : 235 ~ 238, 243 (EI)
- [19] Sun D L, Huang G T\*, Jiang J C, Zhang M G, Wang Z R, Comparison of the effect of protective layer on the probability of chain damage of explosive debris, Journal of Northeastern University (natural science), 2013, 34 (S1): 248 ~ 250, 264 (EI)
- [20] Sun D L, Huang G T\*, Jiang J C, Zhang M G, Wang Z R, A new methodology for creating probit models to assess the domino effect caused by overpressure, Journal of Northeastern University (natural science), 2011, 34 (S1) : 265 ~ 272 (EI)
- [21] Sun D L, Huang G T\*, Jiang J C, Zhang M G, Wang Z R, Parametric Approach of Fragment Trajectory and Target Terms for Structural Fragments, Journal of Modeling and Optimization, 2012, 4(1): 27 ~ 36
- [22] Sun D L, Huang G T\*, Jiang J C, Zhang M G, Wang Z R, Impact probability of projectile from debris of spherical tank explosion, Journal of wuhan university of technology, 2013, 35 (1) : 119 ~ 123, 130 (Chinese core)
- [23] Sun D L, Huang G T\*, Jiang J C, Zhang M G, Wang Z R, Investigation on Impact Probability between Fragments from Horizontal Cylindrical Vessel Explosion and Cylindrical Tank, International Journal of Advancements in Computing Technology, 2013, 5(7): 48 ~ 57 (EI)
- [24] Sun D L, Wang Z R, Huang G T\*, Jiang J C, Zhang M G, Research progress on the chain effect of explosion debris in storage tanks, Scientific Journal of Mathematics Research (SJMR), 2013, 3 (3) : 93 ~ 104 (Chinese core)
- [25] Sun D L, Huang G T\*, Jiang J C, Zhang M G, Wang Z R, Investigation into the probability of fragments from spherical vessel explosion impact over spherical objective by Monte Carlo method, International Journal of Safety and Security Engineering (EI)

Main teaching paper (1) :

Sun D L, Development and feasibility study of safety engineering major in east China university of science and technology[J]. ECUST education, 2014, (1): 19-22.

Scientific research achievements (4 items) :

- "Interactive risk management system for major urban hazard sources based on multi-technology integration" software;
- "Regional quantitative risk assessment" software;
- "Quantitative risk assessment of chemical accident domino effect" software;
- "Risk assessment of urban public safety" software (in research)

The main reward:

Software and technology award (1):

"Software and hardware technology and its application for emergency management of urban industrial hazard", a result obtained from technological development, has won the second prize of scientific and technological progress of institutions of higher learning of the Ministry of Education of the People's Republic of China, specific as follows:

SUNG DongLiang (9/9), Software and hardware technology of emergency management of urban industrial hazard sources and its application, National Ministry of Education, Ministry of Education higher education science and technology progress award, The second prize, 2012

(JIANG JunCheng, ZHANG MingGuang, WANG Yan, WANG ZhiRong, ZHENG XiaoFeng, DING XiaoYe, QIAN JiaNan, HAN XueFeng, SUNG DongLiang)

Supervising master students:

At present, there are 12 postgraduate students in related fields

Academic and social activities:

Major academic activities (14):

- 10/2012, 9th ASIA-OCEANIA SYMPOSIUM ON FIRE SCIENCE AND TECHNOLOGY, Make a topic report;
- 11/2012, 2012 INTERNATIONAL SYMPOSIUM ON SAFETY SCIENCE AND TECHNOLOGY, Make a topic report;
- 11/2014, 2014 INTERNATIONAL SYMPOSIUM ON SAFETY SCIENCE AND TECHNOLOGY, Make a topic report;
- 10/2015, 2015 national university safety engineering academic annual conference, Study;
- 04/2016, 8th International Seminar on Fire and Explosion Hazards, Make a topic report;
- 07/2016, 11th International Symposium on Hazards, Prevention, and Mitigation of Industrial Explosion, Make a topic report;