Dr. Mengge Dong

Nationality: China
Telephone: (+86)15040061229
Email: dongmengge@smm.neu.edu.cn
Address: NO. 3-11, Wenhua Road, Heping District, Shenyang, P. R. China
Google scholar: https://scholar.google.com/citations?user=ulmO-iIAAAAJ&hl=en&oi=ao

Education

- **9/2016-7/2020**, Metallurgical Resource Cycling Science and Engineering, Northeastern University, **Ph.D**.
- **9/2013-7/2015**, Environmental Science, Northeastern University, **M.E.**
- **8/2009-6/2013**, Environmental Science, Northeastern University, **B.S.**

Program Experience

1 Utilization of boron containing resources, **National Natural Science Foundation of China**, **National Key Research and Development Program of China**, **Fundamental Research Funds for the Central Universities** and **Postdoctoral Science Foundation of Northeastern University**, **PI**;

2 Radioactive solid waste cleaning and controlling and safe disposal technology, **National Key Research and Development Program of China**, **Co-PI**;

3 Study of neutron shielding performance of boron containing and preparation of low cost shielding materials, **National Natural Science Foundation of China**, **Co-PI**;

4 Industrial wastewater treatment, **National Natural Science Foundation of China**, **Participant**;

5 Synthesis Mechanism, Microstructure and Properties of WB_2 and WB_4 Materials, **National Natural Science Foundation of China**, **Participant**;

6 Study on neutron shielding performance of Al-AlB_{12}-B_4C composites, **Fundamental Research Funds for the Central Universities**, **Participant**;

7 Analysis of interface diffusion behavior of Boronizing on titanium alloy surface by Ti(TC_4)/B_4C diffusion couple, **Fundamental Research Funds for the Central Universities**, **Participant**.

Working Experience

4/2021-present, Lecturer, Department of Resources and Environment, Northeastern University; **Courses for undergraduate student and Postgraduate student**: Environmental engineering, Principle and technology of material separation, Solid waste treatment and resource utilization, Theory and technology of radiation protection.

4/2021-4/2023, Postdoc, Northeastern University, Supervisor: Prof. Xiating Feng, Chinese Academy of Engineering, President of Northeastern University.

6/2023-present, Postdoctoral Fellow (CEE Departmental Postdoctoral Fellowship Scheme), Department of Civil and Environmental Engineering, The Hong Kong Polytechnic University.

Publications (* means corresponding author)

1 **Mengge Dong** *et al*. A novel comprehensive utilization of vanadium slag: As gamma ray shielding material. Journal of Hazardous Materials, 318 (2016) 751-757. (**IF= 14.224**)

2 **Mengge Dong** *et al*. A novel method of utilization of hot dip galvanizing slag using the heat waste from itself for protection from radiation. Journal of Hazardous materials, 344 (2018) 602-614. (**IF= 14.224**)

3 **Mengge Dong** *et al*. Using Iron Concentrate in Liaoning Province, China, to Prepare Material for X-Ray Shielding. Journal of Cleaner Production, 210 (2019) 653-659. (**IF= 11.1**)

4 **Mengge Dong** *et al*. Upcycling of boron bearing blast furnace slag as highly cost-effective shield for protection of neutron radiation hazard: An innovative way and proposal of shielding mechanism. Journal of Cleaner Production, 2022, 355: 131817. (**IF= 11.1**)

5 **M.G. Dong** *et al*. A comparative study on gamma photon shielding features of various germanate glass systems. Composites Part B: Engineering, 165 (2019) 636-647. (**IF= 13.1**)

6 D. A. Fang, X. F. Zhang, **M. G. Dong**, X. X. Xue. A novel method to remove chromium, vanadium and ammonium from vanadium industrial wastewater using a byproduct of magnesium-based wet flue gas desulfurization. Journal of Hazardous Materials, 336 (2017) 8-20. (**IF= 14.224**)

7 Suying Zhou, **Mengge Dong**, Xueyong Ding, Xiangxin Xue, He Yang, Xuefei Zhang. A near-zero-waste approach using simple physical-chemical methods recovery high concentrations of ammonia nitrogen, heavy metal, and sodium salts from hazardous vanadium-extracted solution. Journal of Cleaner Production, 316 (2021) 128363. (**IF 11.1**)

8 Suying Zhou, **Mengge Dong**, Xueyong Ding, Xiangxin Xue, He Yang. Application of RSM to optimize the recovery of ammonia nitrogen from high chromium effluent produced in vanadium industry using struvite precipitation. Journal of Environmental Chemical Engineering. 9 (2021) 106318. (**IF= 7.968**)

9 **Dong Mengge** *et al.* The potential use of boron containing resources for protection against nuclear radiation. Radiation Physics and Chemistry, 188 (2021) 109601. (**IF= 2.9**)

10 **Mengge Dong** *et al*. Highly cost-effective shielding composite made from vanadium slag and boron-rich slag and its properties. Radiation Physics and Chemistry, 141 (2017) 239-244. (**IF= 2.9**)

11 **M.G. Dong** et al. Shielding properties of $80TeO_2$-$5TiO_2$-(15-x) WO_3-xA_nO_m Glasses using WinXCom and MCNP5 code. Radiation Physics and Chemistry, 141 (2017) 172-178. (**IF= 2.9**)

12 **Dong Mengge** *et al*. Study of comprehensive shielding behaviors of chambersite deposit for neutron and gamma ray. Progress in Nuclear Energy, 146 (2022) 104155. (**IF= 2.7**)

13 **Mengge Dong** *et al*. Shielding properties and mechanism of a novel neutron shielding material made from natural Szaibelyite resource. Progress in Nuclear

energy, 106 (2018) 140-145. (**IF= 2.7**)

14 **M.G. Dong** *et al*. Shielding effectiveness of boron-containing ores in Liaoning province of China for gamma ray and thermal neutron. Nuclear Science and Techniques, 29 (2018) 58. (**IF= 2.8**)

15 **M.G. Dong** *et al*. Investigation of gamma radiation shielding properties of lithium zinc bismuth borate glasses using XCOM program and MCNP5 code. Journal of Non-Crystalline Solids, 468 (2017) 12-16. (**IF= 4.458**)

16 **M.G. Dong** *et al*. Investigation of shielding parameters of some boron containing resources for gamma ray and fast neutron. Results in Physics, 13 (2019) 102129. (**IF= 5.3**)

17 **M.G. Dong** *et al*. WCu composites fabrication and experimental study of the shielding efficiency against ionizing radiation. Radiation Physics and Chemistry , 200 (2022) 110175. (**IF= 2.9**)

18 **Dong M** *et al*. Gamma ray attenuation behaviors and mechanism of boron rich slag/epoxy resin shielding composites. Nuclear Engineering and Technology. 2023 55(2023): 2613-20. (**IF= 2.7**)

19 **Dong M** *et al*. Green and low-carbon upcycling of ludwigite: Prepared shields against nuclear radiation hazards and shielding mechanism. Radiation Physics and Chemistry. 208 (2023): 110931. (**IF= 2.9**)

20 Ge C, **Dong M***, Zhou S, Xiao D, Bu E, Lin X, Yang H, Xue X. Unconventional High-Value Utilization of Metallurgical Iron-Bearing Dust as Shielding Composite for Medical X-rays. Sustainability. 15(2023): 6682. (**IF= 3.9**)

21 A. Kumar, M. I. Sayyed, **Mengge Dong***, Xiangxin Xue*. Effect of PbO on the shielding behavior of $ZnO–P_2O_5$ glass system using Monte Carlo simulation. Journal of Non-Crystalline Solids, 481 (2018) 604-607. (**IF= 4.458)**

22 S. A.M. Issa, A. M. A. Mostafa, T. A. Hanafy, **Mengge Dong***, Xiangxin Xue. Comparison study of photon attenuation characteristics of Poly vinyl alcohol (PVA) doped with $Pb(NO_3)_2$ by MCNP5 code, XCOM and experimental results. Progress in Nuclear Energy, 111 (2019) 15-23. (**IF= 2.7)**

23 F. Li, **M. Dong**, L Wang, Z. Fan. Solid boronizing on the surface of pure titanium TA1 and titanium alloy TC_4. Journal of Northeastern University (Natural Science), 35 (2014) 1284-1287. **(EI，in Chinese)**

24 **Mengge Dong** *et al*. Shielding Analysis and radiation resistant effects of epoxy resin for gamma ray. Atomic Energy Science and Technology, 50 (2016) 2101-2106. (**EI, in Chinese**)

25 **Mengge Dong** *et al*. Purification of the leaching liquid from the boron-rich slags by the alkaline leaching method under ordinary pressure and the preparation of borax. Journal of Northeastern University (Natural Science), 36 (2015) 786-790. (**EI, in Chinese**)

Scientific conferences

1 **M.G. Dong** *et al*. Cheap gamma ray shielding materials made by vanadium slag. IYNC2016 (International Youth Nuclear Congress). July 24-30 2016, Hangzhou, China. (The conference report was recommended to publish in Energy Procedia

as Excellent report).

2 **Mengge Dong** *et al*. Analysis of shielding properties of specific boron containing ores in Liaoning province for Thermal Neutron and Gamma Ray. 2016 Annual Meeting of China Society of Radiation Protection. October 24-28 2016, Shenzhen, China. (The conference report was selected as the excellent report to publish in Radiation Protection).

3 **Mengge Dong**. Thermal neutron shielding performance and mechanism of boron rich slag as low cost shielding material. 6th International Conference on Sustainable Solid Waste Management (NAXOS 2018) June 12-16 2018, NaXOS, Greece.

4 **Mengge Dong.** Study on preparation of shielding materials by boron resources in Liaoning province. 2019 Annual Meeting of China Society of Radiation Protection. October 29 - November 2 2019, Fuzhou, China.

5 **Mengge Dong.** Preparation and optimization of ray shielding materials from natural and artificial boron-containing ores. 2020 Annual Meeting of China Society of Radiation Protection. December 2-6 2020, Huizhou, China.

6 **Mengge Dong.** Studies of physical behaviors of some boron containing resources and nuclear radiation rays. 3rd International Forum on Advances in Radiation Physics (IFARP-3). February 24-25 2021, Sunway, Malaysia.

7 **Mengge Dong.** Effect of Direct Addition of Lead on Radiation Protection Ability of Boron-containing Mineral Composites. 2021 Annual Meeting of China Society of Radiation Protection. Qingdao, China.

8 **Mengge Dong.** Shielding behaviors and mechanism of someboron containing resoureces for nuclear radiation protection. IX International Scientific Conference (ACTUAL PROBLEMS OF SOLID STATE PHYSICS). November 22-26 2021, Minsk, Belarus. (Invited talk).

9 **Mengge Dong.** Application of WCu composites materials to protect againse gamma radiation: experimental and theoretical studies. 15th International Symposium on Radiation Physics (ISRP-15). December 6-10, 2021, Kuala Lumpur, Malaysia.

10 **Mengge Dong.** Study on the application of boron-containing resources (boron mud) in the field of ray shielding in Liaoning Province. Technical Seminar on Safe Disposal and Resource Utilization of Solid/Waste in Nonferrous Industry. September 25-26, Liaoning Shenyang. (Invited talk)

11 **Mengge Dong.** Effect of Direct Addition of Lead on Radiation Protection Ability of Boron-containing Mineral Composites. 2022 Annual Meeting of China Society of Radiation Protection. August 16-20 2022, Qingdao, China.

Reviewing

- Progress in Materials Science
- Journal of Hazardous Materials
- Journal of Cleaner Production
- Composites Part B: Engineering
- Ceramics International
- Journal of Materials Research and Technology-JMR&T
- Materials Science & Engineering B

- Journal of Alloys and Compounds
- Journal of Non-Crystalline Solids
- Progress in Nuclear Energy
- Results in Physics
- Radiation Physics and Chemistry
- Nuclear Engineering and Technology
- The European Physical Journal Plus
- Vacuum
- Nuclear Science and Techniques
- Chinese Journal of Physics
- Radiochimica Acta
- Journal of Physics and chemistry of Solids
- Polymer Composites
- Applied Radiation and Isotopes
- Journal of the Australian Ceramic Society
- Journal of Testing and Evaluation

Honors

- Second Prize of Metallurgical Science and Technology, China, 2022
- Excellent doctoral dissertation, Liaoning Province, 2022
- National scholarship for doctoral student, Ministry of Education of the People's Republic of China, 2 times
- Excellent graduated student, Liaoning Province
- Outstanding graduate student, Shenyang city
- World's Top 2% Scientists 2020, 2021, 2022 (John P.A.Ioannidis, Stanford University)
- Outstanding Reviewer of the Nuclear Engineering and Technology(NET) journal, 2021 and 2022.

Skills

- XRD, SEM-EDS, TEM, FITR, XPS, Raman, mechanical properties analysis for products
- Analysis for shielding properties using MCNP5, SuperMC and WinXcom
- Calculation for shielding performance using Gamma ray and Neutron testing devices
- Radiation damage analysis
- Wastewater treatment experiments

Language

Chinese: native (mother language)
English: fluent; understanding, writing, and speaking are good

Referees

1. **Xiating Feng**, Professor
   President of Northeastern University,
   Academician, China Academy of Engineering
   Northeastern University
   Tel: +86 13808671436
   Email: fengxiating@mail.neu.edu.cn

2. **Mohamed Bourham**, Alumni Distinguished Graduate Professor
Director: COE Master of Engineering Program
North Carolina State University
Tel: 919-515-7662
Email: bourham@ncsu.edu

3. **Lakshminarayana Gandham,** Senior research professor
Kyungpook National University, Republic of Korea
Tel: +82-01053664283
Email: gandham@knu.ac.kr

4. **Xiangxin Xue**, Professor
Department of Resource and Environment
Northeastern University
Tel: +86-024-83687719
Email: xuexx@mail.neu.edu