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主要科研项目及代表性成果(包括项目、论文、专著、获奖、专利等):						
<p><b>科研项目:</b></p> <p>(1) 国家自然科学基金委员会, 面上项目, 52074192, 泡沫酶功能化特性及抑制煤自燃的机理研究, 2021-01 至 2024-12, 58 万元, 在研, 主持.</p> <p>(2) 天津市科技计划重大专项, 18ZXQSF00020, 防治化工园区易燃液体流淌火的多态泡沫及其单动力应用技术研究, 2018/10-2021/09, 50 万元, 在研, 主持</p> <p>(3) 天津市自然科学一般项目, 19JCYBJC23000, 抑制粉尘的多态泡沫胶及其应用装备技术研究, 2019/04-2022/03, 10 万元, 在研, 主持</p> <p>(4) 天津市津南区科技计划项目, 20161516, 空气水性泥浆泡沫防治火灾的技术研究, 2016/12-2017/12, 20 万元, 已结题, 主持</p> <p>(5) 天津市自然科学一般项目, 15JCYBJC22900, 抑制粉尘的胶体泡沫及其应用装备技术研究, 2015/05-2017/04, 10 万元, 已结题, 主持</p> <p>(6) 国家自然科学基金青年项目, 51304146, 防治煤储运中粉尘的泡沫溶胶及单动力发泡装备的特性研究, 2014/01-2016/12, 25 万元, 已结题, 主持</p> <p>(7) 天津市重点研发计划, 18YFJLCG00140, 高性能环保型胶体泡沫及其单动力制备装置的应急救援灭火系统, 2018/10-2021/09, 25 万元, 在研, 合作单位主持。</p> <p><b>学术论文:</b></p> <p>(1) <b>Zhilin Xi</b><sup>(#)(*)</sup>, BangXin Jin, Longzhe Jin<sup>(*)</sup>, Meitong Li, Shanshan Li. Characteristic analysis of complex antioxidant enzyme inhibitors to inhibit spontaneous combustion of coal. <i>Fuel</i>, 2020, 267(9):117301.</p> <p>(2) <b>Zhilin Xi</b><sup>(#)(*)</sup>, Xiaodong Wang, Meitong Li, Xiaoli Wang<sup>(*)</sup>. Characteristic analysis of pulverized coal combustion. <i>Combustion Science and Technology</i>, 2020, DOI: <a href="https://doi.org/10.1080/00102202.2019.1704282">10.1080/00102202.2019.1704282</a>.</p> <p>(3) <b>Zhilin Xi</b><sup>(#)</sup>, Ke Gao, Xiangyu Guo<sup>(*)</sup>, Meitong Li, Changxing Ren. Mechanistic study of the inhibition of active radicals in coal by catechin. <i>Combustion Science and Technology</i>, 2020,</p>						

DOI: 10.1080/00102202.2020.1718122.

- (4) **Zhilin Xi**<sup>(#)</sup>, Ze Shan, Meitong Li, Xiaodong Wang<sup>(\*)</sup>. Analysis of coal spontaneous combustion by thermodynamic methods. *Combustion Science and Technology*, 2020, DOI: 10.1080/00102202.2020.1734797.
- (5) **Zhilin Xi**<sup>\*</sup>, Shuhui Zhou, Longzhe Jin<sup>\*</sup>. Experimental investigation of self-hardening foam-sol for controlling diffusion of static coal dust. *Powder Technology*, 2019, 345(5):274–282.
- (6) **Zhilin Xi**<sup>\*</sup>, Xiaodong Wang, Xiaoli Wang, Li Wang, Ding Li, Xiangyu Guo, Liwei Jin. Self-hardening thermoplastic foam for the inhibition of coal oxidation at low temperatures. *Combustion Science and Technology*, 2019, 191(11):1942-1959.
- (7) **Zhilin Xi**<sup>\*</sup>, Xiaodong Wang, Xiaoli Wang<sup>\*</sup>, Li Wang, Ding Li, Xiangyu Guo, Liwei Jin. Polymorphic foam clay for inhibiting the spontaneous combustion of coal. *Process Safety and Environmental Protection*, 2019, 122(2):263-270.
- (8) **Zhilin Xi**<sup>\*</sup>, Xiangyu Guo, J.Y. Richard Liew<sup>\*</sup>. Investigation of thermoplastic powder synergizing polymorphic foam to inhibit coal oxidation at low temperature. *Fuel*, 2018, 226(16):490-497
- (9) **Zhilin Xi**<sup>\*</sup>, Liwei Jin, J.Y. Richard Liew<sup>\*</sup>, Ding Li. Characteristics of foam sol clay for controlling coal dust. *Powder Technology*, 2018, 335(13):401–408
- (10) **Zhilin Xi**<sup>\*</sup>, Ding Li, Zhenya Feng. Characteristics of polymorphic foam for inhibiting spontaneous coal combustion. *Fuel*, 2017, 206(20):334-341
- (11) **Zhilin Xi**<sup>\*</sup>, Zhenya Feng, Ang Li. Synergistic coal dust control using aqueous solutions of thermoplastic powder and anionic surfactant. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 2017, 520(9): 864–871.
- (12) **Zhilin Xi**<sup>\*</sup>. Experimental investigation of the innovative foaming device using gas as the sole power for firefighting. *Process Safety Progress*, 2017, 36(2):150–157.
- (13) **Zhilin Xi**<sup>\*</sup>, Xutong Sun. Effectiveness of thermoplastic powder to retard self-heating and spontaneous combustion of coal. *Combustion Science and Technology*, 2016, 188(8):1331-1344.
- (14) **Zhilin Xi**<sup>\*</sup>, Ang. Li. Characteristics of thermoplastic powder in an aqueous foam carrier for inhibiting spontaneous coal combustion. *Process Safety and Environmental Protection*. 2016, 104(7):268-276.
- (15) **奚志林**, 李晶, 范冰冰, 泡沫溶胶抑制静态煤尘特性及其应用技术的试验研究, *煤炭学报*, 2015, 40(s1):126-131.
- (16) **Zhilin Xi**<sup>\*</sup>, Manman Jiang, Changping Sun, Xian Tu. Controlling the coal dust at transshipment point: a study of the foam-sol foaming device. *International Journal of Mining Science and Technology*, 2014, 24(5): 625-630.
- (17) **Zhilin Xi**<sup>\*</sup>, Manman Jiang, Jinjun Yang<sup>\*</sup>, Xian Tu. Experimental study on advantages of foam-sol in coal dust control. *Process Safety and Environmental Protection*, 2014, 92(6): 637-644.

(18)Yi Lu, **Zhilin Xi\***, BangXin Jin, Meitong Li, Changxing Ren. Reaction mechanism and thermodynamics of the elimination of peroxy radicals by an antioxidant enzyme inhibitor complex. *Fuel*, 2020, 272:117719.

#### 授权发明专利:

- (1) **Xi, Zhilin**; Shan,Ze; Jin, Bangxin. Foam Generator for Preparing Foam.2020.4.15, Australian innovation.2020100567.
- (2) **奚志林**,一种用于制备泥浆泡沫的产泡装置, 2018.2.2, 中国, ZL. 201610152363.6
- (3) **奚志林**, 冯真雅. 一种单动力产泡装置, 2017.10.3, 中国, ZL 201610013564.8.
- (4) **奚志林**, 李彭辉, 范冰冰, 李晶, 一种用于测试泡沫溶胶抑制粉尘效果的实验装置, 2016.8.24, 中国, ZL 201410498569.5.
- (5) **奚志林**, 沈介雨, 一种用于测试泡沫溶胶吸附粉尘的实验装置, 2014.11.5, 中国, ZL.201310015928.2
- (6) **奚志林**, 张嘉琪, 杨进军, 黄高建, 控制传送带转载点煤尘的锥形喷射泡沫溶胶发生装置, 2014.8.6, 中国, ZL.201210333011.2

#### 人才称号:

- (1) 天津市“131”创新型人才培养工程第二层次, 2017年
- (2) 天津市特聘教授青年学者, 2019年
- (3) 天津市高校“中青年骨干创新人才”, 2019年

#### 奖励:

- (1) 获天津市科学技术进步奖, 一等奖 1 项。
- (2) 指导学生获“第十四届‘挑战杯’天津市大学生课外学术科技作品竞赛”特等奖.
- (3) 指导学生获“第三届中国‘互联网+’大学生创新创业大赛天津赛区比赛暨 2017 年天津市大学生创业大赛”三等奖
- (4) 获第十四届“挑战杯”天津市大学生课外学术科技作品竞赛优秀指导老师.