

гнітного поля; слизькі поверхні підвищують ризик падіння людини, яка потрапляє на них; підвищена чи знижена температура устаткування, матеріалів, повітря робочої зони, і навіть вологість повітря.

На підставі аналізу виробничого травматизму та виявлених причин нещасних випадків розробляються заходи щодо попередження травматизму на виробництві, умовно можна поділити на: організаційні, технічні, санітарно-гігієнічні, соціально-економічні, правові та лікувально-профілактичні.

**Висновок.** Наявність небезпечних та шкідливих виробничих факторів потребує подальшого полегшення умов праці. Розробка необхідних заходів з охорони праці ґрунтується на об'єктивній оцінці впливу виробничих факторів на організм людини, систематичному аналізі основних причин порушень правил виконання робіт, вимог охорони праці, електробезпеки, пожежної безпеки та виробничої санітарії.

## MAIN OCCUPATIONAL RISKS WHEN RESEARCHING THE EFFICIENCY OF ENERGY RECOVERY OF ELECTRIC VEHICLES IN URBAN OPERATING CONDITIONS ACCORDING TO THE LEGISLATION OF CHINA

### ОСНОВНІ ПРОФЕСІЙНІ РИЗИКИ ПРИ ДОСЛІДЖЕННІ ЕФЕКТИВНОСТІ РЕКУПЕРАЦІЇ ЕНЕРГІЇ ЕЛЕКТРОМОБІЛІВ У МІСЬКИХ УМОВАХ ЕКСПЛУАТАЦІЇ ВІДПОВІДНО ДО ЗАКОНОДАВСТВА КИТАЮ

*Student (II level of study) Du Sizhuo,*

*scientific consultant Ph.D., associate professor O. I. Ilinska*

*National Technical University "Kharkiv Polytechnic Institute, Kharkiv*

**Анотація.** Наведено основні професійні ризики під час процесу дослідження параметрів експлуатації електромобілів та наведено основні законодавчі акти Китаю, пов'язані з наведеними ризиками.

**Ключові слова:** професійні ризики, експлуатація автомобілів, законодавство Китаю

**Annotation.** The main professional risks during the process of researching the operating parameters of electric vehicles are given, and the main legal acts of China related to the mentioned risks are given.

**Keywords:** professional risks, car operation, Chinese legislation

**Introduction.** Occupational safety and health has become an issue of increasing concern in the process of human resource management of enterprises. In order to protect the safety and health rights of employees at work, developed countries such as the United States, the United Kingdom and Japan have formulated occupational safety and health laws earlier.

China has also stipulated in some basic laws and related special laws and regulations that enterprises have the responsibility to protect employees' occupational safety and health. Since the introduction of western occupational safety and health management system in 1995, more and more enterprises in China have started to take this as the standard and gradually increase the investment in the management of employees' occupational safety and health.

**Actuality.** In response to the unsafe and unhygienic factors in the labor process, labor laws provide workers with the right to occupational safety and health protection in order to guarantee the safety and health of workers in the labor process. About half of the international labor conventions and recommendations are related to labor safety and health. The Labor Law of China has a special chapter on labor safety and health. In addition, there are a series of labor safety and health regulations and national standards for safety and health that are in line with the Labor Law, such as the Provisions on Reporting and Handling of Casualties among Enterprise Employees issued by the State Council of China in 1991, the Mine Safety Law of the People's Republic of China adopted by the National People's Congress of China in 1992, the Measures for the Administration of Mine Safety Inspectors promulgated by the Ministry of Labor of China in 1994, and the 2002 China The Law of the People's Republic of China on Production Safety adopted by the National People's Congress, etc. 0.

**The main risks.** The main occupational health risks involved in implementing the evaluation of the energy recovery efficiency of electric vehicles under urban operating conditions are the following.

1) Fatigue while driving. The factors that cause fatigue driving are many. Driver fatigue is mainly the fatigue of nerves and sensory organs, as well as limb fatigue caused by prolonged fixed posture and poor blood circulation. The driver sits in a fixed seat for a long time, the movement is somewhat restricted, the attention is highly concentrated, busy judging the stimulus information outside the car, and the mental state is highly tense, which results in blurred eyes, back pain, slow reaction, inflexible driving and other driving fatigue phenomena. When the driver is fatigued, the judgment ability decreases, the reaction is slow and the operation error increases.

Factors that may increase the risk of the formation of driving fatigue.

- Living environment: too many household chores or marital discord; heavy mental burden.
- Sleep quality: sleeping too late, too little sleep time; poor sleep effect; noisy sleep environment does not guarantee the quality of sleep.
- Car environment: poor air quality, poor ventilation; too high or too low temperature;

serious noise and vibration; improperly adjusted seats; tension with fellow passengers.

- Outside environment: driving in the late afternoon, evening, early morning, late night hours; poor road conditions; good road conditions, single situation; sand, rain, fog, snow weather driving; poor traffic environment or traffic conditions congestion.

- Operating conditions: long time, long distance travel; too fast or too slow speed; too limited time to reach the destination.

- Physical conditions: poor physical strength and endurance; reduced visual and hearing ability; physical weakness or suffering from some chronic diseases; taking drugs that are contraindicated for driving vehicles.

- Driving experience: low technical level, rusty operation; short driving time, little experience; poor safety awareness.

According to the "People's Republic of China Road Traffic Safety Law Implementation Regulations" Article 62, the driver shall not exceed 4 hours of continuous driving.

2) Accident risk - traffic accident. The reasons can include bad weather conditions (fog, rain), careless driving, including other road users.

3) The risk of fire injury during vehicle charging. During the charging of electric vehicles, due to weather and other factors, uncontrollable factors such as battery combustion may occur and cause injuries to employees who are working, resulting in the occurrence of employee workplace injuries, which are injuries from adverse factors and occupational diseases suffered by workers while engaging in occupational activities or activities related to occupational activities.

Article 14 of China's Work Injury Insurance Regulations establishes the cases in which an injury is recognized as work-related 0.

4) The risk of radiation when using computers or other electronic devices. The use of computers in the process of data processing may lead to excessive exposure to ionizing radiation if the computer is used for too long.

According to the national standards of the People's Republic of China electromagnetic radiation protection regulations, occupational exposure: the specific absorption rate (SAR) is less than 0.1W/kg averaged over the whole body for any 6 consecutive minutes during an 8h workday [4].

It should be noted that when working at a computer for a long time, additional health risks may arise due to hypodynamia, a long stay in one position, and overstrain of the visual analyzer.

**Conclusion.** The main professional risks in the process of evaluating the efficiency of energy recovery of electric vehicles in urban conditions of operation are risks associated with driving a car and risks when working with a computer.

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## ОЦІНКА ПРОФЕСІЙНОГО РИЗИКУ У ЗВАРЮВАННІ

### ASSESSMENT OF OCCUPATIONAL RISK IN THE WELDING

*Студент (І рівень навчання) Артюхов Д. В.,  
науковий керівник асистент Османова О. В.*

*Національний технічний університет «Харківський політехнічний інститут, м. Харків*

**Анотація.** Обґрунтовано доцільність та необхідність використання ризик-орієнтованого підходу для виявлення комплексу небезпечних і шкідливих факторів у зварювальному виробництві.

**Ключові слова:** Професійний ризик, робоче місце зварника, виробничі фактори, професійні захворювання.

**Annotation.** Feasibility and necessity of using a risk-oriented approach to identify a complex of dangerous and harmful factors in welding production is substantiated

**Keywords:** occupational risk, welder workplace, welding, production factors, occupational diseases.

Виробничий процес будь-якої технологічної складності, організований у тій або іншій галузі промисловості, сфері послуг, управління і реалізації продукції, тісно пов'язаний із ризиком для життя і здоров'я працівників [1]. Підвищення ефективності планування дієвих заходів для забезпечення реалізації права працівників на безпечні та здорові умови праці шляхом удосконалення методичних підходів до ідентифікації та оцінювання професійних ризиків є основною складовою системи управління охороною праці [2].