Interview records

Q: We've known that the standards and solutions on the pollution of heavy metal ions are not clearly involved in the "Law of the People's Republic of China on Prevention and Control of Water Pollution". What it mentions is only the prohibition of emissions, without specific disposal methods and measuring standards. What do you think of it?

A: For one thing, the emission standards of different pollutants should be issued on the website of the Ministry of environmental protection. In addition, about the disposal measures, in fact, its legal responsibilities involve three aspects: the criminal responsibility, civil responsibility, and administrative responsibility. The two former can only be evaluated by the professional institutions. The latter one, the administrative punishment, is usually a fine with the amount of 20%-30% of the direct economic loss caused by the pollution accident. All in all, the disposal of pollutant incidents requires the coordination of different laws. For another, there have been a number of refined penalties on the heavy metal pollution. In 2013, the Supreme People's court and the Supreme People's Procuratorate issued a judicial interpretation, which mentioned about the heavy metal pollution treatment, saying that the enterprise is considered to take criminal responsibilities if the pollution emission is more than three times of the standard.

Q: In the past few years, the measurements of metal pollution were not launched formally. But since last year, the environment protection departments at all levels have gradually started the calculation of soil pollutants. But when we searched on the official website for the items about the heavy metal ions in the water, what we got is "empty", which means that it is not a compulsory item of the measurement. Do you think it is a legal loophole?

A: The atmospheric emission standard has just been amended, which mentions the measurement of lead in the dust. It is amended because the atmosphere pollution has been an increasingly concerned event nowadays. What I mean is that the issue of a policy needs time and it depends on the current social situation. Since the standard of water pollution is amended in 2008, and at that time the heavy metal pollution is not the main problem of it, the specific standards are not listed.

Q: In the past years, there were several outbreaks of pollution of chromium and lead. And as far as we know, since the beginning of the 2014, a number of experts and scholars have been got down to discuss the development of "Heavy Metal Pollution Prevention and Control Regulations". What do you think of the regulation and do you have any views on how to regulate heavy metal pollution by laws in China?

A: I am not quite clear about the "Heavy Metal Pollution Prevention and Control Regulations". Based on its name, it should be promulgated by the organization of the

State Council. However, on the one hand, it is only a "Regulation", which belongs to the administrative law. So it is not a national law. On the other hand, from the professional perspective, it is not necessary to promulgate this regulation because the National People's Congress is now working on the "Soil Pollution Prevention and Control Law ", and China also has the "Law of the People's Republic of China on Prevention and Control of Water Pollution" , the "Law of the People's Republic of China on Prevention and Control of atmospheric Pollution ", the "Law of the People's Republic of China on the Prevention and Control of Environmental Pollution by Solid Wastes", and the " Law of the People's Republic of China on Prevention and Control of Radioactive Pollution". Once these laws are well implemented, the heavy metal pollution will be settled down too.

Q: We also have some questions about the government's supports for the development of the new technologies aimed at the disposal of the environment pollution. What we know is that the Ministry of Environmental Protection did have relevant approaches towards the development and application management of new technologies, as well as some incentives. Nevertheless, there are not as many new technologies on the market for application as we expect. How come?

A: Actually, the encouragement from the Ministry of Environmental Protection is only one positive part for the development or the application of new technologies in the market. It is more important to focus on the genuine effect of the new technology. If the technology is practical enough, together with the help from laws, there is no doubt that it will be incorporated by the market soon.

Q: Since the supportive policy from the Ministry of Environmental Protection was issued in 2008, at a relatively early year, is it possible for the ministry to have a further policy for the development of environment technologies?

A: There is no need for another supportive policy. One reason is that the issuing of a new policy shall experience a rather complicated process, and thus it is not realistic. Another reason is that every year there is a fund about ten million yuan from the ministry and the local government, which is given to projects on environment protection, especially for projects on water pollution. So if your team wants to promote your iGEM project further, you can also get support from the fund.

Q: The target of our project is to construct a biofilm with proteins we want to express. And the proteins on the biofilm can absorb some heavy metal ions in sewage specifically, enrich them, and finally recycle them. Do you think there will be some policies supporting for such a project?

A: This is a really great project. It is a project on not only the disposal of pollutants, but also the circular economy. China provides extra fund for project on circular economy. What's more, there are also several laws giving favor to the project, such as

the "Circular Economy Promotion Law", and "Water pollution prevention action plan" that is issued newly. As I mentioned before, what matter are whether the project or the technology is practical and whether it can be a market-oriented one.

Q: The main difference between our method, the biological method, and the conventional methods is that ours is more moderate and has a relatively low energy consumption. However, the efficiency is not so well as the chemical ones, causing our method very difficult to be accepted by factories. It must be a disadvantage for the marketization of our project. From this angle, it seems that the biological methods need more policy support, at least at the present stage.

A: This can be a problem, but don't be restricted by it. The biology method is more practical in fields like the farmland pollution, because with seldom the second pollution it is safer. So you could develop technology for the disposal of the farmland pollution. In this way, you can work with the government to get fund support and may not need the support from the policies. In a word, the efficiency is only a consideration of the technology application. You can choose to change a way for the development. As for me, I am more optimistic about the application of biological methods on the soil pollution treatment, because the soil pollution requires a long-term treatment and is easier to suffer from the second pollution.

Q: Another problem is about the genetic engineering, and in other words, our project develops a genetically modified organism. So will the genetically engineered practice lead to the exclusion of the public?

A: This concern is not necessary. Because the genetically modified organisms that are trapped in the current debate are mainly the GM crops. I mean that is something to eat. Your project uses it in purpose of pollution treatment, so there will be no contradiction.