

Interview with Researcher Qu Jianjun

Q: I have learned on the Internet that your research direction is the law of wind-sand movement. In terms of sand control engineering, our project also needs to carry out some design based on the above two aspects. Could you can briefly tell us the law of wind-sand movement in different regions and the corresponding prevention measures?

A: First of all, for the Gobi area in the extreme arid area, we found the "elephant nose" effect of wind-sand flow. Based on this effect, an "A"-shaped sand prevention net was established at the Mogao Grottoes in Dunhuang, and a "six belts in one" sand-hazard prevention network was established, which was mainly used for resistance and combined with solid transportation. Secondly, for the windy and sandy areas along the southeast coast of China, due to the spatial structure of sand supply, sand transport, and sand accumulation in tropical sandy beach activities, we have adopted sand transport belts to adopt solid resistance technology measures to restore vegetation, and sand belts for us. The use of dredging technology effectively prevents the operation of coastal sand currents, and effectively solves the problem of sand damage.

As for new materials, there are straw paper honeycomb board sand fixation barriers, honeycomb plastic woven sand fixation nets, wave-proof sand fixation barriers, etc. You can just get to know them.

Q: Our project needs to design a desert climate simulation incubator by ourselves, and there are still some problems with the detailed design such as temperature and humidity in the desert climate, can you give us some suggestions?

A: Your ideas are very good, and for putting your cyanobacteria-Bacillus subtilis symbiosis system into a desert environment for experimental cultivation, I can provide you with the help of a desert test site. In Shapotou, Zhongwei, the experimental base has prepared grass grids. You can experiment in the grass grids to see how effective your bacteria can be in sand control.