

## 虞毅

### 报告人简介:

虞毅，男，汉族，1964年2月4日生，博士，研究员，中国治沙暨沙业学会理事，国家沙化土地封禁保护区专业委员会副主任委员。1984年毕业于原内蒙林学院沙漠治理专业，1999年获日本鸟取大学农林环境科学专业硕士学位，2002年获生物环境科学专业博士学位，2002-2004年相继在日本鸟取大学及日本国立环境研究所做博士后研究。2004-2017年在国家林业局国际竹藤中心工作，原产业处处长，研究员。



长期致力于荒漠化防治方面的研究，主要从事我国北方干旱半干旱区防风固沙技术、土壤风蚀、沙丘移动等研究工作。先后主持日本环境省地球环境研究国际合作项目、国家林业局“948”项目、林业公益性行业科研专项、国家科技支撑计划专题、农业科技成果转化项目、林业科技成果推广项目、中国欧盟生物多样性中标项目、国外智力引进项目、中国挪威国际合作项目等近20项。在国内外期刊发表学术论文40余篇，主编《沙袋沙障防沙治沙技术》、《沙柳沙障》、《采煤沉陷区土壤治理与修复》、《文冠果生物学》学术专著4部。申报相关专利10余项，已获发明专利4项，实用新型专利8项，其中《一种利用可生物降解材料制成的沙障及其配置方法》完成了低成本国产化的产品研发及市场推广应用，作为我国特色和优势治沙技术，在联合国防治荒漠化公约第十三次大会作循环展播及现地示范参观，并进入国家一带一路技术储备库，在内蒙、青海等干旱、半干旱地区推广应用20000余亩，取得显著社会生态效益。主编欧盟生物多样性项目《中国北方干旱区珍稀濒危植物复壮更新》技术规范1部，主编国家林业行业标准《沙冬青平荏复壮技术规范》1部。获省部级科技进步二等奖3项，内蒙古自治区青年科技标兵1项，中国林学会林业青年优秀学术论文奖1项，日本国环境省生态前沿奖（Award for The Eco-Frontier Fellowship）1项，内蒙古自治区成果鉴定2项“生物基可降解纤维沙袋沙障治沙技术及应用研究（NK-20140358）、沙柳沙障治沙技术及其防腐性能研究（NK-20140357）。多次应邀参加国家林业局、内蒙、青海、新疆、甘肃等地林业厅及联合国防治荒漠化中心相关培训、授课。

## Yi Yu

### Profile of the Author:

Yan Yi, male, Han nationality, born on February 4, 1964, Ph.D., researcher, director of China Sand Control and Sand Industry Association, deputy director of the National Sandification Land Protection and Protection Zone Professional Committee. He graduated from the Inner Mongolia Forestry College in 1984 with a master's degree in desert management. In 1999, he obtained a master's degree in agro-forestry science from Tottori University in Japan. In 2002, he obtained a doctorate in bio-environmental science. From 2002 to 2004, he was successively at Tottori University in Japan and the National Corporation of Japan. Postdoctoral research in environmental research 2004 - 2017, working at the International Bamboo and Rattan Center of the State Forestry Administration, director of the former industry division, researcher.

He has been working on the prevention and control of desertification for a long time, mainly engaged in research on wind and sand fixation technology, soil wind erosion and sand dune movement in arid and semi-arid regions of northern China. He has presided over the International Cooperation Project for Environmental Environment Research of the Ministry of the Environment of Japan, the "948" Project of the State Forestry Administration, the research project of forestry public welfare industry, the topic of national science and technology support plan, the transformation project of agricultural science and technology achievements, the promotion project of forestry science and technology achievements, and the biodiversity of China's EU The winning projects, foreign intellectual introduction projects, China-Norway international cooperation projects, etc. nearly 20 items. He has published more than 40 academic papers in domestic and foreign journals, including "Sandbag Sand Barrier Sand Control Technology", "Shaliu Sand Barrier", "Soil Treatment and Restoration in Coal Mining Subsidence Area", and "Wenguan Fruit Biology" Academic Special 4th. More than 10 related patents have been filed, and 4 invention patents and 8 utility model patents have been approved. Among them, "a sand barrier made of biodegradable materials and its configuration method" has completed the research and development

of low-cost localized products. Market application and application, as a feature of China's characteristics and superior sand control technology, in the 13th Congress of the United Nations Convention to Combat Desertification, a circular exhibition and local demonstration tour, and into the national one-stop technology reserve, Inner Mongolia, Qinghai and other arid, semi-arid The region promoted the application of more than 20,000 acres and achieved remarkable social and ecological benefits. He edited the technical specification of the EU Biodiversity Project “Revitalization and Renewal of Rare and Endangered Plants in Arid Areas of Northern China”, and edited the national forestry industry standard “Technical Specification for Rehabilitation of Shadongqing Pingyi”. 3 provincial and ministerial-level scientific and technological progress second prizes, 1 Inner Mongolia Autonomous Region youth science and technology model, 1 China Forestry Society Forestry Youth Excellent Academic Paper Award, 1 Japan Environmental Province Ecological Frontier Award (Ecological Frontier Scholarship), Inner Mongolia Autonomous Region Achievements To identify two “bio-based degradable fiber sandbag sand barrier sand control technology and application research (NK-20140358), Shaliu sand barrier sand control technology and its anti-corrosion performance research (NK-20140357). Many times invited to participate in the country The Forestry Bureau, Inner Mongolia, Qinghai, Xinjiang, Gansu and other forestry departments and the United Nations Desertification Control Center will provide training and lectures.

## 生物降解聚乳酸沙袋沙障治沙技术

**摘要：**荒漠化是全球共同面临的严峻挑战。机械沙障固沙是目前荒漠化防治的一种主要措施。用于制作沙障的材料比较多样，但普遍存在使用年限短、运输设置不便及材料区域地带性等问题。

聚乳酸沙袋沙障是一种利用绿色环境友好型可降解聚乳酸材料，充填以就地取材的流沙设置而成的沙障，实现了以沙治沙的原始创新，具有质量轻、可完全降解、使用寿命长、生态效益好等优点。经过十余年在中国多个气候类型区的实地推广应用，有效解决了传统沙障设置中铺设效率低、材料匮乏等难题，具有良

好的平铺式固沙沙障的防风固沙效果。最初由中国学者虞毅等发明研究，是具有我国自主知识产权的特色和优势治沙技术，已进入国家一带一路技术储备库，并在 2017 年联合国防治荒漠化公约第十三次缔约方大会作循环展播及现地示范。目前正在制定聚乳酸纤维沙障作业设计规程，现已在我国内蒙、青海等干旱、半干旱地区推广应用，取得显著社会生态效益。

## **Sandy Desertification Combating Technology of Biodegradable Polylactic Acid Sandbag Sand Barrier**

### **Abstract:**

Biodegradable polylactic acid sandbag sand barrier sand control technology  
Desertification is a serious challenge facing the world. Mechanical sand barrier sand fixation is a major measure for desertification control. The materials used to make sand barriers are diverse, but there are widespread problems such as short service life, inconvenient transportation, and zonality of materials.

Polylactic acid sandbag sand barrier is a kind of sand barrier formed by using green environmentally friendly degradable polylactic acid material and filled with sand flowing from local materials. It realizes the original innovation of sand control sand, with light weight and complete degradation. , long service life, good ecological benefits and so on. After more than ten years of field promotion and application in many climate types in China, it has effectively solved the problems of low laying efficiency and lack of materials in the traditional sand barrier setting, and has a good wind-fixing effect of flat sand-fixing sand barrier. Originally invented by Chinese scholars such as Yan Yi, it is a technology and superior sand control technology with independent intellectual property rights in China. It has entered the national technology package of the Belt and Road Initiative and was made at the 13th Conference of the Parties to the United Nations Convention to Combat Desertification in 2017. Cycling broadcast and local demonstration. At present, the design rules for the operation of polylactic acid fiber sand barriers are being formulated, and they have been promoted and applied in arid and semi-arid areas such as Inner Mongolia and Qinghai, and have achieved remarkable social and ecological benefits.