



香 韵



李希马兴瑞率广东省党政代表团赴西藏对接对口支援工作
吴英杰齐扎拉王伟中参加有关活动
扎实做好新发展阶段对口援藏工作
坚决完成中央赋予广东的重大政治任务

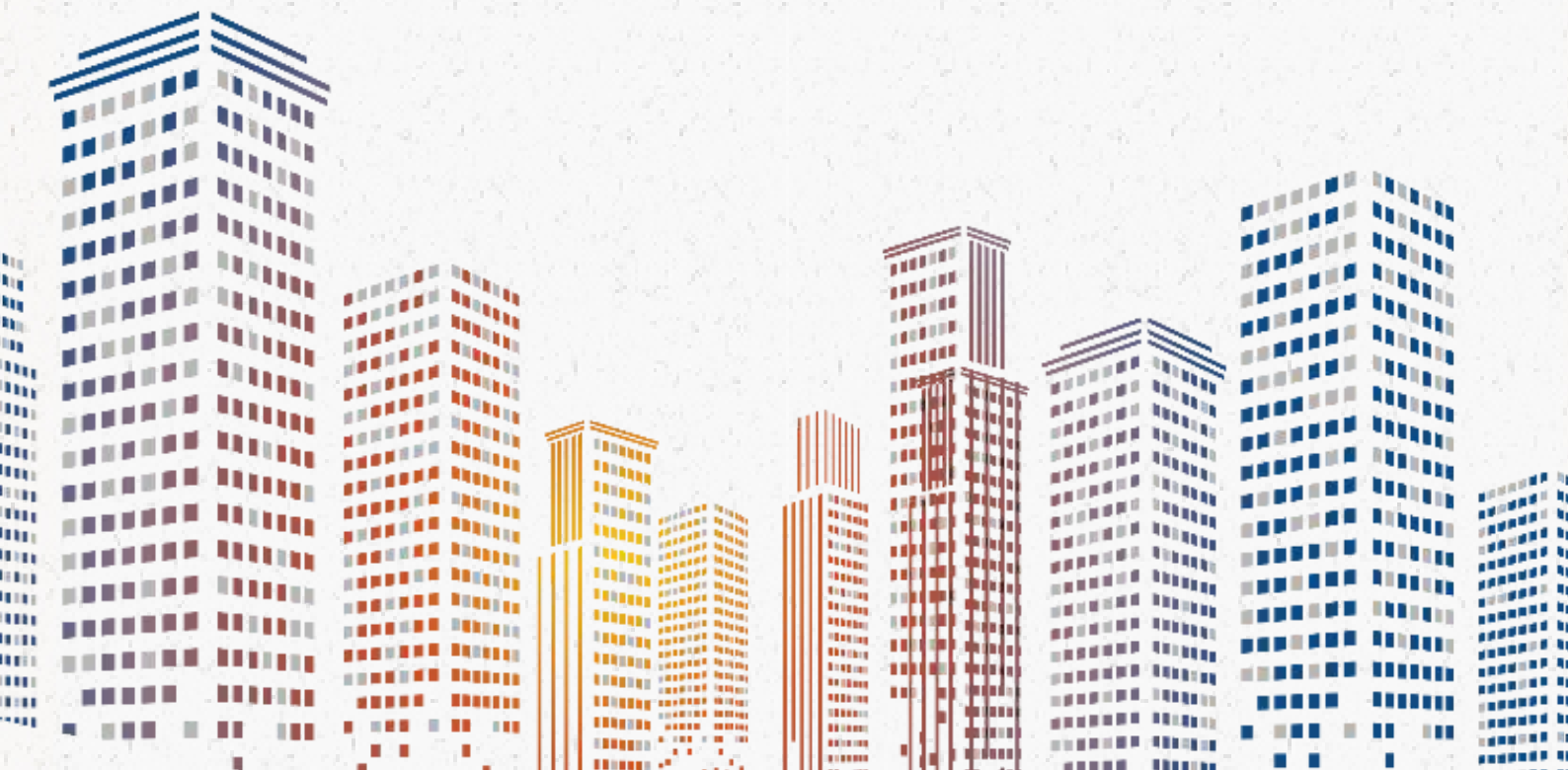


广东省党政代表团赴西藏对接对口支援工作 实地调研指导波顿投资项目

波顿集团：
对口帮扶显真情 助力雪域高原藏香传万里



百年基业 你我共筑



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习近平在西藏林芝考察调研

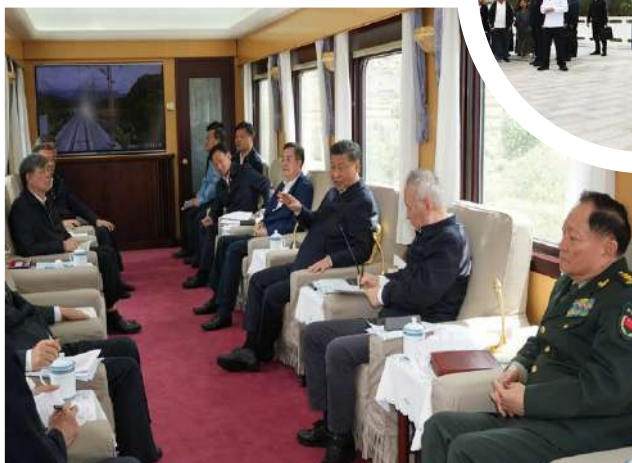
Xi Jinping visited Nyingchi, Tibet for inspection and investigation

文 / 行政中心
By Administrative Center



习近平总书记7月21日赴西藏考察调研。当天上午，习近平乘坐飞机抵达林芝米林机场，受到西藏各族干部群众热烈欢迎。随后，他乘车来到尼洋河大桥，了解雅鲁藏布江及尼洋河流域生态环境保护等情况。当天下午，习近平先后来到林芝市城市规划馆、巴宜区林芝镇嘎拉村、工布公园，考察城市发展规划、乡村振兴、城市公园建设等工作。22日上午，习近平来到林芝火车站，了解川藏铁路总体规划及拉萨至林芝段建设运营等情况，随后乘火车前往拉萨市，实地察看拉林铁路沿线建设情况，深入研究有关问题。

Xi Jinping, General Secretary of the Communist Party of China (CPC) Central Committee, left for Tibet on the 21st. On the morning of the same day, Xi arrived at Nyingchi Mainling Airport, where he was warmly welcomed by officials and people of all ethnic groups in Tibet. Later, he went on a ride to the Nyang River Bridge, where he learnt about ecological environment protection and other matters related to the Brahmaputra and Nyang River basin. In the afternoon, Xi visited the Nyingchi City Planning Hall, Gala Village of Nyingchi Town in Bayi District, and Gongbu Park, where he inspected urban development planning, rural revitalization and urban par construction etc. On the morning of the 22nd, Xi visited Nyingchi Railway Station to learn about the overall planning of the Sichuan-Tibet Railway and the construction and operation of the Lhasa-Nyingchi Railway, where he studied relevant matters in depth.



广东省党政代表团赴西藏对接对口支援工作 实地调研指导波顿投资项目

Guangdong provincial Party and government delegation conducted
pairing assistance and field research and guidance on Boton
investment project in Tibet

文 / 行政中心
By Administrative Center



9月2日至4日，广东省委书记李希、省长马兴瑞率广东省党政代表团赴林芝市就认真学习贯彻习近平总书记视察西藏重要讲话重要指示和关于西藏工作、对口支援工作的重要论述精神，做好新发展阶段广东对口支援西藏林芝工作进行交流对接。西藏自治区党委书记吴英杰，区党委副书记、自治区主席齐扎拉，广东省委副书记、深圳市委书记王伟中参加有关活动。

On September 2 to 4, Secretary of the CPC Guangdong Provincial Committee Li Xi and Provincial Governor Ma Xingrui led the Party and government delegation to Nyingchi, where they communicated and coordinated Guangdong's pairing assistance for Nyingchi in the new development phase according to the earnest study and implementation of the key instructions of General Secretary Xi Jinping's important speech on the inspection of Tibet and the spirits of the discussion on the work in Tibet and the pairing assistance. Wu Yingjie, Secretary of the CPC Tibet Autonomous Region, Qizhala, Deputy Secretary of the CPC District Committee and Chairman of the Autonomous Region, and Wang Weizhong, Deputy Secretary of the CPC Guangdong Provincial Committee and Secretary of the CPC Shenzhen Municipal Committee attended relevant activities.

据了解，在林芝市期间，代表团一行深入乡村、援藏展览馆、粤林产业园等地的经济社会发展和广东省对口支援工作进行了考察。其中，广东省委书记李希，省委副书记、省长马兴瑞，省委副书记、深圳市委书记王伟中一行实地考察了波顿集团在林芝市投资的项目，仔细参观了解了项目的产品展示、规划发展、投资情况，对波顿集团积极响应党的号召，以实际行动开展对口帮扶支援给予了高度肯定。

During the stay in Nyingchi, the delegation visited villages, the Tibet Aid Exhibition Hall, Yuelin Industrial Park etc. to investigate the economic and social development and Guangdong's pairing assistance work. Among them, the Secretary of the CPC Guangdong Provincial Committee Li Xi, Deputy Secretary and Provincial Governor Ma Xingrui, and Deputy Secretary of the CPC Guangdong Provincial Committee and Secretary of the CPC Shenzhen Municipal Committee Wang Weizhong made field visits to the projects invested by Boton Group in Nyingchi. They diligently visited to understand product display, planning and development, and investment into the projects and spoke highly of Boton Group for actively responding to the call of the Party and acting to implement pairing assistance.

本项目以植物的深层次研究开发利用为目标，利用现代生物化学技术手段，重点开展植物源活性成分生物转化、活性筛选、分离纯化、活性评价及植物源活性成分产品相关标准研究，紧密结合个人护理用品、食品、保健品、医药、大健康等行业领域的发展需求，开发出环境友好、安全性高的绿色功能性的植物源活性成分产品。

The project aims at in-depth research and development and utilization of plants. By making use of modern biochemistry technology, it focuses on plant source active ingredient bioconversion, active filtering, separation and purification, activity assessment and related standard research of products of plant source active ingredients. Closely combined with development needs of personal care products, food, health care products, medicine, health etc., it aims to develop green functional products of plant source active ingredients that are environmental friendly and highly safe.

波顿集团响应党的号召以实际行动推进对口支援工作，携手林芝推动共同富裕的具体行动。未来，波顿集团将进一步做好干部人才选派、“组团式”人才援藏、当地干部人才培养等工作，更好强化人才支撑；深化交往交流交融，促进铸牢中华民族共同体意识，为谱写雪域高原高质量发展新篇章贡献出自己的力量。

Boton Group has taken concrete actions in response to the call of the Party to promote pairing assistance and work with Nyingchi to facilitate detailed actions towards common prosperity. In the future, Boton Group will continue to excel in leader talent selection, group talent support for Tibet, local leader talent training, etc. and better strengthen talent support. It will also deepen exchanges, communications and integration, so as to promote the sense of community of the Chinese nation and contribute to the new stage of quality development of Tibet.



广东省党政代表团参观波顿展厅



集团董事副总裁杨迎春接待广东省党政代表团



波顿集团：对口帮扶显真情 助力雪域高原藏香传万里

Boton Group: Pairing assistance reveals true feelings
Assist Tibet to spread fragrance afar

文 / 行政中心
By Administrative Center

党的十八大以来，习近平总书记站在全面建成小康社会、实现中华民族伟大复兴中国梦的战略高度，把脱贫攻坚摆在治国理政突出位置，提出一系列新思想新观点，作出一系列新决策新部署，推动中国减贫事业取得巨大成就，对世界减贫进程作出了重大贡献。

Since the 18th National Congress of the CPC, from the strategic perspective of fully building a moderately prosperous society and realizing the Chinese dream of national rejuvenation, General Secretary Xi Jinping has given poverty alleviation high priority in national governance. He has formulated a series of new thoughts and ideas and put in place a series of new decisions, which have greatly promoted China's poverty alleviation and made important contributions to the world's poverty alleviation.

深圳是改革开放后党和人民一手缔造的崭新城市，波顿是其中的受益者，在新时代脱贫攻坚的伟大实践中，波顿集团始终履行“服务国家大局、服务人民大众”的强企使命，自觉地把“感恩改革开放、回报全国人民”作为义不容辞的政治责任，坚定不移贯彻落实习近平总书记关于脱贫攻坚的重要论述，按照省委、省政府的安排，勇于担当大责、扛重任，高度聚焦香精香料产业、电子雾化产业以及大健康产业，充分利用集团资源优势，加强产业协同发展，持续推动对口帮扶，以先行示范标准执行脱贫攻坚的各项任务，助力帮扶地区实现经济增长。

Shenzhen is a brand new city created by the Party and the people after the reform and opening up. Boton Group is one of the many that have benefited from it. In the great poverty alleviation in the new era, Boton Group has always been practicing its strong enterprise mission of “serving the country and the people”. It consciously takes “appreciating the reform and opening up and repaying all Chinese people” as a political obligation and unswervingly implements General Secretary Xi Jinping’s important discourse on poverty alleviation. Boton Group has been courageous to shoulder major responsibilities under the guidance of the provincial Party Committee and government. It highly focuses on the flavor and fragrance industry, electronic atomizer industry and health industry. By making full use of resource advantages of the group, it has been strengthening coordinated industry development, continuing to promote pairing assistance, carrying out various poverty alleviation tasks based on exemplary standards and helping supported regions achieve economic growth.

悠悠古藏香 绵绵波顿情

Ancient Tibetan fragrance with the care of Boton

2020年4月23日，波顿集团生物科技项目签约进驻林芝经开区粤林产业园。粤林产业园是广东省“十三五”对口支援规划的重点援藏项目，也是林芝经开区建设的启动项目和产业辐射项目，总投资1.81亿元，占地面积105亩。

On April 23, 2020, The Biotechnology project of Bolton Group signed a contract to enter Yulin Industrial Park in Nyingchi Economic Development Zone. Yuelin Industrial Park is the key Tibetan aid project in the “13th Five-Year plan” of Guangdong Province, and also the starting project and industrial radiation project of nyingchi Economic development Zone construction, with a total investment of 181 million yuan and an area of 105 mu.

西藏的冬天还未褪去寒意，此处已春花烂漫——有着“西域江南”之称的林芝市，位于西藏东南部，雅鲁藏布江中下游，其西部和西南部分别与拉萨市、山南市相连，西连那曲市嘉黎县、东接昌都市，南部部分区域在藏南地区（印度占据）、缅甸接壤，它有着世界上最深的峡谷——雅鲁藏布江大峡谷和世界第三深度的峡谷帕隆藏布大峡谷，随处可取的名贵药材，不胜其数的经济植物，无不展现着林芝得天独厚的自然资源。

While the winter chill still remains in Tibet, spring blossoms are now spotted here in Nyingchi city, known as “Jiangnan in west China”. It is located in southeastern Tibet along the middle and lower reaches of Brahmaputra. It is connected with Lhasa city in the west and Shannan city in the southwest, Jiali County of Naqu city in the west, Changdu city in the east. Parts of it in the south is located within southern Tibet (occupied by India) and borders Myanmar. It has the world’s deepest canyon—Yarlung Zangbu Grand Canyon and the world’s third deepest canyon Palong Zangbu Grand Canyon. The readily available precious medicinal plants and countless economic plants are all Nyingchi’s unique natural resources.





自 2018 年起，波顿集团根据中央打赢脱贫攻坚战的总体要求，结合广东省委、省政府的部署，主动投身东西部协作帮扶攻坚战，以“项目帮扶、产业帮扶、技术帮扶”为切入点，以植物的深层次研究开发利用为目标，利用现代生物化学技术手段，重点开展植物源活性成分生物转化、活性筛选、分离纯化、活性评价及植物源活性成分产品相关标准研究，紧密结合个人护理用品、食品、保健品、医药、大健康等行业领域的发展需求，开发出环境友好、安全性高的绿色功能性的植物源活性成分产品。

Since 2018, Boton Group has been actively involved in the east-west collaborative support for poverty alleviation in accordance with the overall requirements of the central government of poverty alleviation and the deployment of Guangdong Provincial Party Committee and government. With “project support, industry support and technology support” as breakthrough points and in-depth R&D and utilization of plants, it makes use of modern biochemistry technology and focuses on plant source active ingredient bioconversion, active filtering, separation and purification, activity assessment and related standard research of products of plant source active ingredients. Closely combined with development needs of personal care products, food, health care products, medicine, health etc., it aims to develop green functional products of plant source active ingredients that are environmental friendly and highly safe.

在波顿林芝项目开展期间，一批批波顿援藏人肩负着党和国家的使命，将改善民生、凝聚人心、共同发展作为出发点和落脚点，采取技术帮扶、人才培养的方式展开深度交往交流交融，用心、用情地做好对口帮扶、民族团结这篇大文章。

During the Boton Nyingchi project, batches of Boton staff assisting Tibet shoulder the mission of the Party and the country, take improving people's livelihood, rallying people's hearts and realizing common development as starting points and goals, carry out in-depth exchanges, communications and integration by technical assistance and talent training. It has been striving for the best outcomes in pairing assistance and national unity with sincerity and affection.





技术帮扶为产业发展插上腾飞翅膀

Technical assistance to promote industrial development

“援藏干部教给我们技术，将这里生长的药材用技术手段把精华提取出来，本来是属于农产品，经过科学技术的提炼后，成为了珍贵的药用精华，村民因此收入提高了不少。”拉格村村民所朗说，拉格村的松茸有很名，村民的主要收入也来自于此。之前鲜松茸的销售价一般为每斤 80-90 元，波顿援藏组介入后，村民们掌握天然萃取的技术，生产的松茸提取物每斤可达 1200 多元。由于西藏野生松茸被公认的“十分好的蛋白质来源”，西藏野生松茸的营养价值能够达到“植物性食品的顶峰”，并被推崇为当今“世界十大健康食品”之一。天然的松茸经过科学技术提取后，更加易于保存以及原料加工，为产品远销减少了运输成本和储存成本。

“The leaders aiding Tibet have taught us the technical means to extract the essence of the medicinal herbs grown here. They were agricultural products in the first place that have been transformed into precious medicinal essence after scientific and technological refinement. The villagers have profited much from it.” Villager of Lage village Suolang said, the village is famous for matsutake, which is the villagers’ main income source. In the past, the price of fresh matsutake was 80-90 yuan per catty. After the Boton Tibetan aid group got involved, the villagers mastered natural extraction technique and the matsutake extract is sold as high as over 1,200 yuan per catty. As wild Tibetan matsutake is well known as a “excellent source of protein”, the its nutrition value has reached the “peak of foods of plant source”. In addition, it is recognized as one of the “top ten healthy food in the world”. It is easier to preserve and process as a raw material after scientific and technological extraction of wild matsutake, which reduces transportation and storage costs for sales in distant markets.

“技术帮扶，加强交往交流交融，可以说是波顿援藏一项有特色的‘自选动作’，成效显著。”波顿第五批援藏工作队援藏工作组组长郑凯清说道，在波顿援藏工作组的积极推动下，波顿和巴宜的“技术帮扶”正扎实推进，该项目将建设应用研究与技术、分离纯化研发与技术、功效评价与分析、产品研发、植物原料、植物细胞工程等 6 个平台，为未来在更大范围内用科技手段助力贫困地区发展提供了宝贵经验和可复制模式。

“Technical assistance to enhance exchanges, communications and integration is a characteristic “voluntary action” of Boton’s assistance to Tibet, which has achieved remarkable outcomes. Zheng Kaiqing, team leader of the Fifth Batch of Boton’s Tibet-aid Working Group said, with the actively promotion of Boton’s Tibet-aid Working Group, technical aid is moving forward steadily. The project will build 6 platforms, including application research and technology, separation and purification research and technology, efficacy evaluation and analysis, product R&D, plant raw materials and plant cell engineering, which will provide valuable experience and replicable model for future development of poverty-stricken regions with the help of scientific and technological means in a larger scope.

特色原材料链接

Links to featured raw materials



简介

Introduction

雪菊中的黄酮含量最高，具有抗氧化的作用。

The flavonoid content in snow chrysanthemum is the highest, which has antioxidant effect.

主要成分

Main chemical composition

糖类、黄酮类、苯丙素类、聚炔类、蒽醌类、挥发油、微量元素等。

Carbohydrate, flavonoid, phenylpropanoid, polyalkyne, anthraquinone, volatile oil, trace elements, etc.



简介

Introduction

抗缺氧作用；抗衰老作用；抗辐射抗肿瘤作用；抗疲劳作用等等。

Anti-hypoxia effect; Anti-aging effect; Anti-radiation and anti-tumor effect; Anti-fatigue effect and so on.

主要成分

Main Chemical Component

红景天苷、红景天苷元、黄酮类化合物、酚类化合物。

Salidroside, salidroginin, flavonoids, phenolic compounds.



简介

Introduction

有祛痰、抗菌等作用。高原地区用于治疗紫外线辐射引起灼伤。

It has expectorant and antibacterial effects. It is used to treat burns caused by ultraviolet radiation in plateau areas.

主要成分

Main chemical composition

主要有效活性成分为桉树脑、龙脑、樟脑、石竹烯、异石竹烯。

It has been widely used in pharmaceutical, food, fragrance and other fields in daily life.



简介
Introduction

长于西藏全境，特别是林芝地等地。治感冒发热喉痛麻疹布头等症。
Long in Tibet, especially in Nyingchi and other places. Cure cold, fever, sore throat, measles and other diseases.

应用领域
Application Area

日常生活中已被广泛应用于制药、食品以及香料香精等多个领域。
It has been widely used in pharmaceutical, food, fragrance and other fields in daily life.



简介
Introduction

保肝解毒、治疗糖尿病、改善心血管系统、肌肤美白。
Protect liver and detoxify, treat diabetes, improve cardiovascular system and skin whitening.

主要成分
Main chemical composition

氨基酸、多肽、蛋白质、苯甲酸、有机锗、维生素B2、维生素C等。
Amino acid, polypeptide, protein, benzoic acid, organic germanium, vitamin B2, vitamin C, etc



简介
Introduction

主治小便不利，水肿，痰饮，脚气，闭经，癫狂，疮疹。
Indications: adverse urination, edema, phlegm, beriberi, amenorrhea, mania, sore rash.

主要成分
Main chemical composition

山奈酚、香豆精、三叶豆甙和维生素A、B、C等
Kahenol, coumadin, trilobin and vitamins A, B, C and so on



刺柏果
Juniper Berry

简介
Introduction

具有清热解毒；燥湿止痒等功效，同时也可用作精油调香。
With heat and detoxification; Dampness antipruritic effect, also can be used as essential oil fragrance.

主要成分
Main chemical composition

为 α -蒎烯, γ -杜松烯,月桂烯和柠檬烯等。
 α -pinene, γ -juniper, laurene and limonene, etc.



绿萝花
Araceae

简介
Introduction

具有降血压、降血糖、降血脂、抗菌消炎、提高免疫力、抗癌等功效。
It has the functions of lowering blood pressure, blood sugar, blood lipid, anti-bacterial and anti-inflammatory, improving immunity and anti-cancer.

主要成分
Main chemical composition

结香苷、结香素、伞形花内脂、十五烷酸等成分。
Anthocyanin, anthocyanin, umbelliflower, pentadecanoic acid and other components.



川贝母
Fritillaria cirrhosa D. Don

简介
Introduction

主治虚劳咳嗽，肺热燥咳，瘰疬，乳痈，肺癆。
Indications of asthenia cough, lung heat dryness cough, scrofula, breast cancer, lung cancer.

主要成分
Main Chemical Component

川贝母中还含有大量非生物碱成分。
Fritillaria thunbergii also contains a large number of non alkaloid components.

波顿：打造“1+9+N”发展平台 重奖科技人才

Boton : Create “1+9+N” Development Platform and Amply
Reward Sci-tech Talents

文 / 行政中心
By Administrative Center



2021年8月，由习近平总书记主持召开的中央财经委员会第十次会议提出，要坚持以人民为中心的发展思想，在高质量发展中促进共同富裕，正确处理效率和公平的关系，构建初次分配、再分配、三次分配协调配套的基础性制度安排，促进人的全面发展，使全体人民朝着共同富裕目标扎实迈进。

In August 2021, the 10th Meeting of the Central Finance and Economics Committee chaired by General Secretary Xi Jinping proposed to uphold the people-centric development mentality, promote common prosperity in high-quality development, correctly handle the relationship between efficiency and fairness, build the coordinated and supportive basic system arrangement of initial distribution, redistribution and third distribution, propel all-round development of people, and enable all people to resolutely march toward the target of common prosperity.

在迈向共同富裕的背景下，作为扎根深圳30年的老字号企业，波顿集团紧跟国家战略发展步伐的行动纲领，先行先试打造“1+9+N”共同发展平台示范样本。

In the context of marching toward common prosperity, as a time-honored enterprise rooted in Shenzhen for 30 years, Boton Group closely follows the action guideline of national strategic development steps, and first tries to set a role model of “1+9+N” common development platform.



“1”是以波顿粤港澳创新创业交流基地为主要阵地，建设国家级科研基地。该基地设立于深圳波顿总部大楼三层。自成立起，坚持引进和培养具有国际影响力的科学家与领军人才，开创出粤港澳三地技术互补、良性互动的协同创新格局，多元的交流活动不断提升粤港澳合作的广度和深度，增强芳香行业以及大健康产业的自主创新能力，推动我国芳香经济的跨越式发展，统筹科技资源，释放科技活力，开展相关领域的技术研究及技术应用，为国家产业技术变革与国际竞争提供战略支撑。

“1” refers to building national scientific research base, with Boton Guangdong-Hong Kong-Macao Youth Innovation and Entrepreneurship Exchange Base as the major battleground. This base is established on the third floor of Shenzhen Boton Headquarter Building. Since its inception, it has adhered to the attraction and cultivation of globally influential scientists and leading talents, created a collaborative innovation pattern of complementary technology and positive interaction among three localities of Guangdong, Hong Kong and Macao, continually expanded the breadth and depth of cooperation among Guangdong, Hong Kong and Macao through diversified exchange activities, reinforced independent innovation capability of aromatic industry and health industry, pushed forward leapfrog development of Chinese aromatic economy, coordinated sci-tech resources, released sci-tech vitality, launched technical research and application in relevant domains, and provided strategic support for national industrial technical transformation and international competition.

“9”是波顿在上海、湖北、江西、山东、西藏和广东的东莞、惠州、电白以及印尼等九个科技环保生产基地。利用当地生态环保生产基地绿色资源，强化总部行政管理、技术统筹，深入实施东西部协作和对口支援，持续推进智力支援、产业支援、大力推进产业合作，探索共建园区、飞地经济等利益共享模式，实现平台、成果、技术、设备、人才等资源共享，为实现共同富裕的战略打造出示范样本。

“9” refers to Boton’s nine sci-tech eco-friendly production bases in Shanghai, Hubei, Jiangxi, Shandong, Tibet and Guangdong Dongguan, Huizhou, Dianbai, as well as Indonesia, to leverage green resources of local eco-friendly production base, strengthen administrative management and technical coordination of headquarter, conduct in-depth collaboration between east and west, as well as counterpart support, persistently press ahead with intellectual support, industrial support, vigorously advance industrial cooperation, explore the benefit sharing modes such as joint construction of park and enclave economy, share resources of platform, achievement, technology, equipment, talent, etc., and create a role model for the strategy of achieving common prosperity.

“N”是波顿在全球设立的N个分支机构。多年来，波顿在欧美地区、亚太地区、中东地区等地区设置了许多办事机构，着力拓展发展新机遇、探索合作新模式，不断取得新的合作成果，同时响应国家“一带一路”倡议，充分发挥波顿技术、生产优势以及“一带一路”沿线国家的市场和资源优势，通过整合产业链的全球优质资源，实现项目整体效益和各方的利益最大化，从而推动“一带一路”建设高质量发展。

“N” refers to N branches established by Boton across the globe. Over the years, Boton has set up many offices in Europe, America, Asia-Pacific region, the Middle East and other regions, focused on expanding new opportunities for development and tapping new cooperation models, constantly achieved new cooperative results, while echoing with the national “Belt and Road” initiative, fully took advantages in its technology and production, as well as markets and resources of the countries along the “Belt and Road”, and maximized overall project benefits and interests of all sides by integrating global outstanding resources of industrial chain, thereby promoting high-quality development of the “Belt and Road” construction.

波顿在实施“1+9+N”战略的同时，坚持人才是第一资源，改善科技创新生态。波顿以国家战略目标与产业未来趋势为引导，集中优势资源、设立项目专项奖金奖励领衔攻关“卡脖子”技术等核心科技高地的领军人才；造就了一大批勇于奉献、甘坐“冷板凳”的科研人才和一线创新实践者乃至大国工匠，为我国实现科技人才梯队建设构筑坚实基础。

When implementing the “1+9+N” strategy, Boton insists on talents as the No.1 resource, improves science and technology, and innovates ecology. Guided by national strategic target and future trend of industry, Boton has gathered superior resources, and set up special project bonus to reward leading talents in core sci-tech highlands such as tackling “stranglehold” technology; created a large number of scientific research talents with courage of dedication and willing to sit on “cold bench”, first-line innovative practitioners and even craftsmen of great power, building a solid foundation for China to realize the sci-tech talent echelon construction.



王明凡董事长在港出席 香港广西社团总会就职典礼

Chairman Wang Mingfan attended the inauguration ceremony of
Federation of HK Guangxi Community Organizations in Hong Kong

文 / 行政中心
By Administrative Center



2021年6月26日，为庆祝中国共产党百年华诞和香港回归祖国24周年，香港广西社团总会在香港亚洲电视厂举办了香港广西社团总会第八届常务理事会就职典礼。

On June 26, 2021, in celebration of the 100th anniversary of the founding of the Communist Party of China and the 24th anniversary of Hong Kong's return to China, Federation of HK Guangxi Community Organizations held the inauguration ceremony of the 8th Standing Council of the Federation at Asian TV studio in Hong Kong.

香港特别行政区行政长官林郑月娥、中央人民政府驻香港特别行政区联络办公室副主任何靖等领导莅临现场观礼，广西壮族自治区党委统战部部长徐绍川通过视频连线发表祝福，香港民政局、中联办多个内设机构、多位全国政协常委及委员共同出席了活动。

Chief Executive of the Hong Kong Special Administrative Region Carrie Lam and Deputy Director of the Liaison Office of the Central People's Government in Hong Kong Special Administrative Region He Jing etc. attended the ceremony. Head of the United Front Work Department of the Guangxi Zhuang Autonomous Region Party Committee Xu Shaochuan expressed his blessing via video streaming. The Hong Kong Home Affairs Department, several internal agencies of the Liaison Office of the Central People's Government in the Hong Kong Special Administrative Region, and a number of members of the Standing Committee of the National Committee of the Chinese People's Political Consultative Conference presented for the event.

全国政协委员、中国波顿集团有限公司董事长兼总裁王明凡当选香港广西社团总会第八届常务理事会会长，他在就职典礼致辞时表示，感谢领导及会员的厚爱与信任，必将不辱使命、不负重托，全力做好会长工作。作为维



王明凡董事长(中)参与活动并合影留念



王明凡董事长(右一)参加就职典礼

护香港繁荣稳定的坚实力量，香港广西社团在 2020 年与全体香港市民一起，日以继夜，共同抗疫，同时也维护了香港的法治秩序，以实际行动打击反中乱港分子，落实“爱国者治港”，支持完善选举制度。接下来，他将与总会一同秉持爱国爱港的优良传统，支持特区政府依法施政，确保“一国两制”实践行稳致远，也将共同促进桂港两地的全方位交流，吸引青少年到内地、大湾区创业就业，共筑美好生活。

Wang Mingfan, a member of the National Committee of the Chinese People's Political Consultative Conference (CPPCC) and chairman and president of China Boton Group was elected as the chairman of the eighth standing Council of the Federation of HK Guangxi Community Organizations. In his inauguration speech, he expressed thanks to the leaders and members for their love and trust and that he would try his best to fulfill his mission without failing all the trust. As a solid power to safeguard Hong Kong's prosperity and stability, the Federation of HK Guangxi Community Organizations worked around the clock with all Hong Kong citizens in 2020 to fight against the Covid-19 epidemic. Meanwhile, it has helped keep the rule of law in Hong Kong by taking actions against anti-China and anti-Hong Kong rioters, implementing “patriots governing Hong Kong” and supporting the improvement of the election system. In the future, he would work with the Federation to uphold the fine tradition of loving the motherland and loving Hong Kong. He would support the SAR government in governing in accordance with the laws to ensure the steady and long-term implementation of “one country, two systems”. In addition, he would jointly promote exchanges in all aspects between Guangxi and Hong Kong, where the youths are attracted to the mainland and the Greater Bay Area for startups and a better life.

最后，王明凡董事长祝愿香港早日恢复成为全球最安全、最稳定、最有发展活力的东方之珠。值此建党 100 周年之际，祝福祖国繁荣昌盛，市民幸福安康！

In the end, chairman Wang Mingfan wished Hong Kong an early recovery as the world's most safe, stable and dynamic Pearl of the Orient. On the occasion of the 100th anniversary of the founding of the Communist Party of China, he wished our motherland prosperity and citizens happiness and well-being!

香港广西社团总会于 2006 年成立，多年来致力团结凝聚桂籍乡亲与社团，促进桂港两地交流，支持特区政府依法施政，参与香港的建设与服务，宣传中央涉港的重大方针政策，维护“一国两制”与《基本法》，为香港的繁荣稳定作出重大贡献，并在短短 15 年内成功发展会员人数达 15 万人，并拥有超过 40 个属会，是香港最富有活力和影响力的爱国爱港社团之一。

Founded in 2006, the Federation of HK Guangxi Community Organizations has been dedicated to unity of Guangxi folks and societies over the years. It has promoted exchanges between both sides, supported the SAR government, participated in the construction and service of Hong Kong, promoted the Hong Kong-related major policies of the central government, maintained “one country, two systems” and the Basic Law. Overall, it has made a significant contribution to the prosperity and stability of Hong Kong. In a short period of 15 years, it has successful extended its membership to 150,000 people with over 40 sub associations, making it one of the most dynamic and influential patriotic and Hong Kong loving societies in Hong Kong.

波顿集团开展庆祝中国共产党 成立 100 周年系列活动

Boton Group launched a series of activities to celebrate the 100th anniversary of the founding of the Communist Party of China

文 / 行政中心
By Administrative Center



为庆祝中国共产党成立 100 周年，回顾党的光辉历程，歌颂建党以来的辉煌成就和丰功伟绩，充分展现“波顿人”的精神风貌和时代风采，进一步浓厚迎建党百年氛围，7 月 1 日，波顿集团开展系列活动庆祝中国共产党成立 100 周年。

In celebration of the 100th anniversary of the founding of the Communist Party of China (CPC), revisit the glorious history of the CPC, eulogize the great achievements since its founding, fully display the spirit of the Boton team and the style of the times, and further enhance the atmosphere to welcome the 100th anniversary of the founding of the CPC, Boton Group held a series of celebration activities on July 1st.

——开展慰问退休老党员活动。受中国波顿集团王明凡董事长委托，波顿党支部一行人带着鲜花和水果走访慰问了退休老党员，向老党员致以诚挚的问候。走访慰问中，波顿党支部代表亲切地询问老党员的身体状况、家庭和生活情况，倾听老党员退休前在工作中所做的积极贡献，并向老党员表示感谢并希望今后继续发挥余热。

——Visiting retired Party members. Entrusted by chairman Wang Mingfan of China Boton Group, members of the Boton Party Branch visited retired Party members with flowers and fruits with sincere greetings. During the visit, representatives of the Boton Party Branch kindly asked about health, family and living conditions of the veteran Party members, listened to the positive contributions made by them before retirement, expressed their gratitude and hoped them to continue to play a part in the future.

——开展重温入党誓词活动。全体波顿党员佩戴党徽，面向鲜红的党旗，高举右拳庄严宣誓，“我志愿加入中国共产党，拥护党的纲领，遵守党的章程，履行党员义务，执行党的决定，严守党的纪律，保守党的秘密，对党忠诚，积极工作，为共产主义奋斗终身，随时准备为党和人民牺牲一切，永不叛党。”铮铮誓言、郑重承诺，更加坚定了理想信念。

——Reviewing the Party oath. All the Boton Party members worn the Party emblem, faced the Party flag, held their right fists and solemnly swore, “I volunteered to join the Communist Party of China, uphold the Party’s program, obey the Party rules, fulfill obligations as a Party member, implement the Party’s decisions, strictly abide by the Party disciplines, keep the Party’s secrets, stay loyal, work actively, strive for life for communism, ready to sacrifice everything for the Party and the people, and never rebel the Party.” The oath and solemn commitment have firmed the ideals and beliefs.

——开展“同唱一首歌”活动。“没有共产党就没有新中国，没有共产党就没有新中国……”一首气势恢宏的《没有共产党就没有新中国》，在场人员的嘹亮歌声中燃情唱响，音符里涌动的是浓浓的爱党情怀，节拍里凝聚的是对党的殷殷祝福！

——“Sing one song together”. “Without the Communist Party there would be no new China, without the Communist Party there would be no new China...”. A magnificent song “Without the Communist Party there would be no new China” was sung aloud with passion. The notes were filled with deep feelings of love for the Party, and the beat was condensed with sincere wishes for the Party!

——集中收看习近平总书记在庆祝中国共产党成立 100 周年大会上重要讲话。会上，在场人员认真学习、深刻领会习近平总书记重要讲话精神，按照习近平总书记“牢记党的初心使命，不懈奋斗，永远奋斗”的要求，坚定理想信念，永葆忠诚本色，牢记职责使命，奋勇开拓进取，在全面建设社会主义现代化国家新征程上，向着第二个百年奋斗目标、向着中华民族伟大复兴的中国梦奋勇前进！



——Watch General Secretary Xi Jinping' s keynote speech at the congress celebrating the 100th anniversary of the founding of the Communist Party of China. At the meeting, all attendees earnestly studies and comprehended spirits of General Secretary Xi Jinping' s keynote speech. In accordance to General Secretary Xi' s requirements of “remember the Party’ s mission, strive tirelessly, strive forever” , we will affirm our faiths, always maintain the loyalty nature, remember our duties and missions, and move forward. On the new journey to fully build a modern socialist country, we will forge ahead toward the second centenary goal and the Chinese dream of great national rejuvenation!

——开展“红色文化”交流活动。本次活动中，深圳市规划和自然资源局向波顿集团赠送百份红色文化地图，助力波顿集团红色文化教育，推动党史学习教育扎实开展。交流中，双方积极互动，对红色文化的理解 and 实践进行了深入探讨。此次活动进一步增强了在场人员对红色文化了解，从而更好地弘扬红色文化、传承红色基因。

——“Red culture” exchanges. During this activity, the Shenzhen Municipal Bureau of Planning and Natural Resources sponsored Boton Group 100 copies of red culture map, which helped Boton Group’ s red culture education and promoted development of Party history education. During the exchange, both sides actively interacted and discussed the understanding and implementation of the red culture in-depth. The event further enhanced the participants’ understanding of the red culture, so as to better promote the red culture and inherit red genes.



——开展优秀共产党员表彰活动。波顿集团党支部评选表彰了郑凯清、李剑政、赵燕、余志虹四位优秀共产党员，努力形成学习先进、崇尚先进、争当先进的良好风尚，凝聚全面推进高质量发展的强大精神动力。

——Commending outstanding Party members. The Boton Group Party Branch selected and commended four outstanding Party members, including Zheng Kaiqing, Li Jianzheng, Zhao Yan, Yu Zhihong. It will try to form the fashion of learning from role models, advocating excellence, and striving to be the excellent, which will integrate the great spiritual power to comprehensively promote quality development.

——展主题为“庆七一、颂党恩、树形象、促发展”的座谈交流活动。座谈会上，波顿集团第一任书记何定一同志给在场人员分享其入党经历，回顾了党的光荣岁月，畅谈祖国发展的美好今天。在场的党员紧紧围绕主题，结合自身工作实际，纷纷畅谈交流了在党史学习过程中的体会和感悟，对学党史、守初心、担使命、促发展的认识和看法，对下一步如何结合自身岗位更好地发挥党员先锋模范作用建言献策。现场交流气氛热烈，生动活泼，各抒己见，畅所欲言。

——“Celebrate July 1, eulogize the Party’s love, build an image and promote development” theme symposium. At the symposium, comrade He Dingyi, the first Party secretary of Boton Group, shared his Party joining experience, reviewed the glorious years in the Party and talked about the development of the beautiful motherland today. Closely combined with the theme and their own work, the attending Party members exchanged their experiences and feelings in the process of learning Party history, their understanding and views on learning the Party history, keeping original aspirations, shouldering missions and promoting development. They too provided suggestions on how to better play a vanguard and exemplary role as Party members in combination with their posts. The exchanges took place in warm and lively atmosphere, where everyone expressed his opinion and spoke freely.

接下来，波顿党支部将以本次会议精神为动力，紧扣各项工作思路，锁定工作任务目标，要发扬钉钉子精神，努力拼搏奋斗，以“时不我待、只争朝夕”的饱满的精神状态、过硬的工作作风，以高标准的工作质量和全新的工作形象，在工作中“扛红旗、站排头、争先锋”，团结动员广大员工在企业高质量发展中建功立业，开创波顿集团持续稳步发展的新局面，继续以优异成绩向中国共产党成立百年献礼！

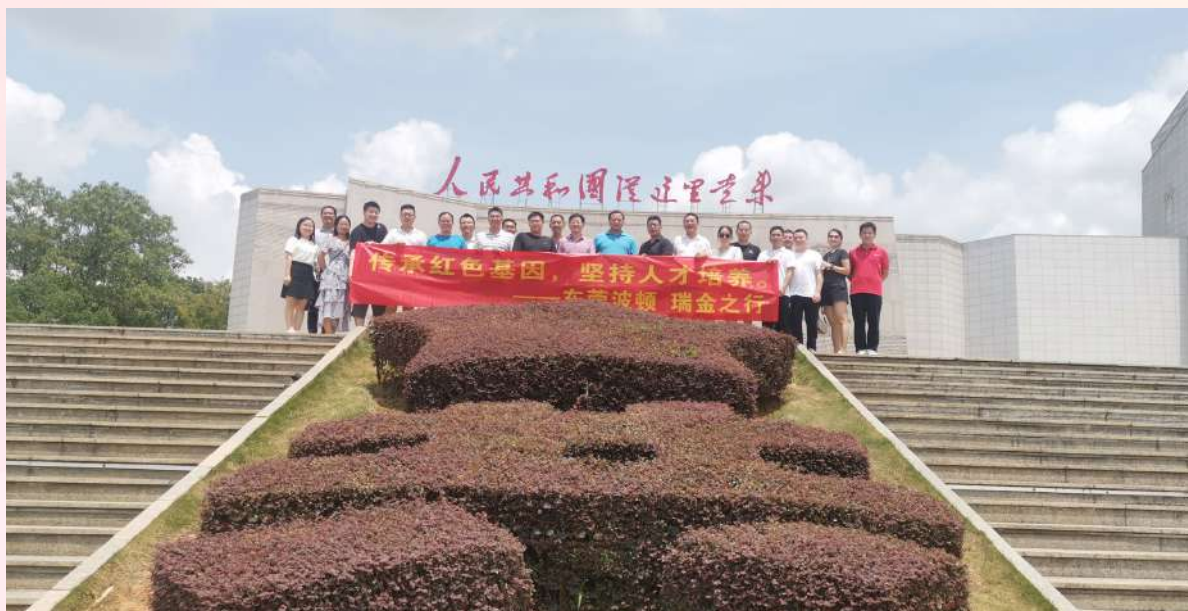
Moving forward, the Boton Party Branch will be driven by the spirits of the symposium, adhere to the roadmap of each piece of work, set task goals, and forge ahead with the spirit of driving nails. The Boton team will be energetic and try to seize the day, with excellent work style, high work quality standards and a new work image. At work, it will “carry the red flag, take lead, strive to pioneer”, unite and mobilize all the staff to make contributions in the quality development of the enterprise, so that together we will initialize a brand new situation of sustainable and steady development of Boton Group and continue to pay tribute to the 100th anniversary of the founding of the CPC of China with excellent achievements.



东莞波顿开展人才战略主题会议

Dongguan Boton held talent strategy theme conference

文 / 东莞波顿
By Dongguan Boton



7月17日，东莞波顿人才战略主题会议在江西省瑞金市瑞景国际酒店五楼会议室召开，此次会议由章明宇总经理助理主持，钱武总经理、邱京副总经理、付从瑞总经理助理、李进董事会秘书出席会议，任命干部参加会议。

On July 17, Dongguan Boton Talent Strategy Theme Conference was held in the conference room on the fifth floor of Ruijing International Hotel, Ruijin city, Jiangxi Province. The meeting was presided over by Assistant to General Manager Zhang Mingyu. General Manager Qian Wu, Deputy General Manager Qiu Jing, Assistant to General Manager Fu Congrui and Secretary of the Board of Directors were present at the conference. Other appointed leaders attended the conference.

此次会议以“传承红色基因，坚持人才培养”为主题，会议对前两年公司人员流动与管理情况进行了讨论，分析研究了当前公司人才工作新形势，安排部署了接下来的人才工作目标，明确了下一步人才工作的思路和具体措施：

The conference theme was “Inherit the red gene and persist talent cultivation”. At the conference, talent flow and management situation of the company in the past two years was discussed, the new situation of talent related work was analyzed and studied, future talent work goals were set up, and ideas and specific measures for future talent related work were clarified:

1. 加大 2.5-5 年人员的引进力度。
1. Increase talent introduction for the next 2.5-5 years.

2. 加大成熟人才的引进力度。

2. Strengthen mature talent introduction.

3. 对于人才的留用，一方面公司要保证薪资到位，另一方面各级领导干部要不断增强自身综合管理能力，秉持对公司负责的态度，对部门的中坚力量要关爱，要敢于负责，管好自己的人，干好自己的事，努力提高抓班子、带队伍的管控能力。

3. For talent retention, on one hand, the company must ensure on-par salary. On the other, all the leaders must enhance their comprehensive management abilities, remain responsible for the company, and care the backbone of departments. They too must dare to be responsible and watch out for their own team, be diligent at their work, strive to improve the management and control abilities of leading teams.

钱武总经理强调：人才工作是一项复杂的系统工程。公司去年休养生息，今年已进入重要的转折点。经过这几年的风雨和历练，公司干部的纪律和意志有了提高，目前各级领导干部已具备“上下同欲者胜”的理念。

General Manager Qian Wu stressed that talent related work is a complex system engineering. He said that the company rested and recovered last year. Now it has met an important turning point this year. After years of twist and turns, the discipline and will of the leaders of the company have been improved. The current management team at all levels is now equipped with the idea of “teams with the same desire from top to bottom win” .

接下来公司将启动全面的人文关怀工作，以东莞为契机，谋求发展；紧紧围绕公司的战略目标，立足东莞，采用立体、全方位的方式落实各项人才政策，大到薪酬晋升，小到吃饭穿衣，一切与员工相关的我们都可以去积极改革和创新，包括食堂改革、班车改革、房贷车贷政策等等，只要有利于员工的政策我们都可以统筹利用起来，让我们的中坚力量得到他们应得的回报。

Moving forward, the company will launch comprehensive humanistic care work and seek development based on Dongguan. It will closely focus on the company's strategic goals and be based in Dongguan to comprehensively and fully implement various talent policies. From salary promotion to food and clothing, any staff related matters could be actively reformed and innovated, including canteen reform, bus reform, mortgage and car loan policies etc. As long as such policies benefit our staff, we can coordinate and utilize them to reward the backbone of our company what they deserve.

只有把我们的优秀员工保障了，把我们的激励机制做好了，把我们可行的晋升通道打通了，才能提高公司下一步培养人才、引进人才、留住人才等一系列工作的成功率，统筹推进各类人才队伍建设，开创东莞波顿人才工作新局面。

Only by providing guarantee for our excellent employees, putting in place a proper incentive mechanism and opening up feasible promotion channels can we improve the success of the company's next series of work, such as talent cultivation, introduction and retention. We shall comprehensively promote building various talent teams to create a new situation of the talent related work at Dongguan Boton.

东莞波顿 瑞金之行

Ruijin visit of Dongguan Boton



消费合作社历史展览馆
Consumer Cooperatives Historic Exhibition Hall



毛主席旧居
Chairman Mao's Former Residence



中华苏维埃共和国邮政局旧址
Former Site of the Post Office of the Soviet Republic of China



工作人员身着红军服装，激情的讲述着红色故事
Staff telling red stories with passion in red Army uniform



中华苏维埃共和国印刷厂旧址
Former site of the printing house of the Soviet Republic of China



第一次全国苏维埃代表大会革命旧址
Former site of the First National Congress of Soviet Revolution



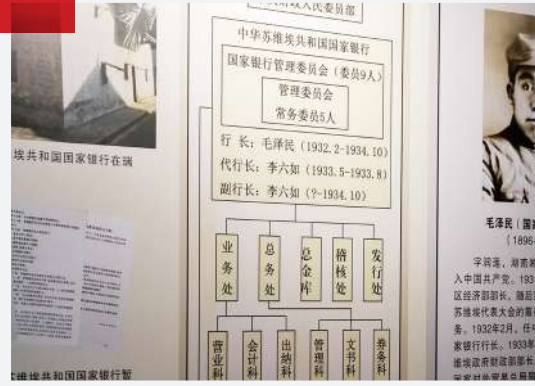
红军烈士纪念塔
Memorial Tower for Red Army Martyrs



中央教育人民委员会机构图
Chart of the Central People's Education Commission



中华苏维埃政府所在地叶坪旧址
Yeping, former site of the Soviet Republic of China



中华苏维埃共和国国家银行组织机构表
Organizational structure of the state bank of the Soviet Republic of China



东莞波顿员工合照留念
Staff group photo of Dongguan Boton



东莞波顿员工合照留念
Staff group photo of Dongguan Boton



深圳市波顿芳香技术研究院 揭牌仪式

中国·深圳 2021.7.30

深圳市波顿芳香技术研究院正式揭牌 Official inauguration of Shenzhen Boton Fragrance Technology Research Institute

文 / 行政中心
By Administrative Center

7月30日，深圳市波顿芳香技术研究院揭牌仪式在集团总部三楼多功能厅隆重举行。深圳市科学技术协会党组书记林祥和全国政协委员、中国波顿集团有限公司董事长王明凡共同为深圳市波顿芳香技术研究院揭牌。

On July 30, the inauguration ceremony of Shenzhen Boton Fragrance Technology Research Institute was held in the multi-purpose hall on level three of the group headquarters. Secretary of the Party Group of Shenzhen Association for Science and Technology Lin Xiang and member of the National Committee of the Chinese People's Political Consultative Conference (CPPCC) and chairman and president of China Boton Group Wang Mingfan jointly unveiled the institute.

在揭牌仪式上，深圳市科学技术协会党组书记林祥作了重要讲话，他说，深圳市波顿芳香技术研究院的成立，将致力于攻克香料香精领域新技术、新课题、新的发展方向，开启香料香精研发新模式，利用民非组织的特点，将吸引更多高校、企业共同参与研究，体制更加灵活，资源整合力度更大。

At the inauguration ceremony, Secretary of the Party Group of Shenzhen Association for Science and Technology Lin Xiang made a keynote speech. He said, after its establishment, Shenzhen Boton Fragrance Technology Research Institute is committed to conquer new technologies, topics and development directions in the field of flavors and fragrances. It will form a new flavor and fragrance R&D mode and leverage the features of private organizations to attract more universities and enterprises in the

participation of joint research. The system will be more flexible and integration of the resources will be stronger.

王明凡董事长代表波顿集团致辞,他说,我们要学习贯彻习近平总书记“七一”重要讲话精神,推动高质量发展,实现自强;我们要以史为鉴,开创未来。他说,波顿集团技术部门要以波顿芳香技术研究院成立为契机,要强化自我技术创新,科技引领新发展,借助波顿芳香技术研究院平台,以香料行业产业发展、成果转化为重点,打造行业领域人才培养、学术研究、产学研用深度融合创新平台和基地,为社会经济和提高国民生活质量提供强有力的支撑,为大健康产业的快速发展做出贡献。

Chairman Wang Mingfan delivered a speech on behalf of Boton Group. He said that we should study and implement the spirits of General Secretary Xi Jinping's important speech on July 1, promote quality development and realize self-improvement, and that we should learn from history and build the future. He mentioned that the technology department of Boton Group should seize the opportunity of the establishment of Boton Fragrance Technology Research Institute, strengthen its own technological innovation, and lead the new development of science and technology. With the institute as a technology platform, it shall focus on the flavor industry development and achievement transformation. It shall also build an innovative platform and base for talent training, academic research and deep integration of industry, university, research and application. As a result, it will provide strong support for social economy and improvements of people's quality of life, as well as for the rapid development of the health industry.

据悉,“深圳市波顿芳香技术研究院”是深圳市民政局批准设立的民办非企业单位,是深圳市首个对香料行业前沿技术开展应用、市场和产业为导向,构建产、学、研、政、企深度融合的创新体系。

It is reported that "Shenzhen Boton Fragrance Technology Research Institute" is a private non-enterprise unit approved by the Shenzhen Municipal Civil Affairs Bureau. It is the first private non-enterprise unit in Shenzhen to carry out the application of cutting-edge technology in the fragrance industry, market and industry-oriented, and build an innovation system with the deep integration of production, learning, research, government and enterprise.

在揭牌仪式上,深圳市波顿芳香技术研究院与清华大学深圳国际研究生院达成大健康方向上的科研合作。

At the inauguration ceremony, Shenzhen Boton Fragrance Technology Research Institute and Shenzhen International Graduate School of Tsinghua University reached a scientific research cooperation



深圳市科学技术协会党组书记林祥为活动发表重要讲话



王明凡董事长为活动致辞

in the health field.

据了解，清华大学深圳国际研究生院是由清华大学与深圳市合作共建的公立研究生教育机构，优先布局清华大学一流的工科学科并辅以创新管理，包括：能源材料、信息科技、医药健康、海洋工程、未来人居、环境生态。这些优势学科与波顿集团产业发展需求高度契合，将为波顿集团产业转型提供有力动力，相信此次合作必将掀开双方优势互补、共赢发展的崭新一页。

It is understood that Shenzhen International Graduate School of Tsinghua University is a public graduate education institution jointly established by Tsinghua University and Shenzhen. Priorities were given top engineering disciplines of Tsinghua University supplemented by innovative management, including: energy materials, information technology, pharmaceuticals and health, ocean engineering, future human habitats and environmental ecology. These competitive disciplines are highly compatible with the industrial development needs of Boton Group and will provide strong drive for the industrial transformation of Boton Group. It is believed that this cooperation will open a new page of complementary advantages and win-win development of both sides.



波顿技术研究院积极布局雾化大健康战略

Boton Technology Research Institute was actively involved in atomization health strategy

文 / 行政中心
By Administrative Center



据人民网6月4日报道：在6月3日下午举行的2021浦江创新论坛全体大会上，军事科学院研究员、中国科协副主席、中国工程院院士陈薇透露，团队研制的雾化吸入式新冠疫苗已获药监局批准进行扩大临床试验，现在正在申请紧急使用。

According to a report by People's Daily on June 4, at the 2021 Pujiang Innovation Forum Plenary Meeting in the afternoon of June 3, it was revealed by researcher of the Academy of Military Sciences, vice chairman of China Association for Science and Technology and academician of Chinese Academy of Engineering Chen Wei that her team's atomized inhalation Covid-19 vaccine had been approved by National Medical Products Administration for expanded clinical trials and application for emergency use had been filed.

资料显示，所谓雾化吸入免疫，即采用雾化器将疫苗雾化成微小颗粒，通过呼吸吸入的方式进入呼吸道和肺部，与口服药物、肌肉注射给药、静脉输液给药一样，雾化是一种给药方式。与其他给药方式相比，雾化具有给药精准、用药量少、起效较快及化痰更有力等优点。

Literature shows the so-called atomized inhalation immunization refers to the use of atomized vaccine in small particles and entry into the respiratory tract and lungs through breathing inhalation. Like oral administration, intramuscular injections and intravenous infusions, atomization is a way of administration. Compared with other administration approaches, atomization has the advantages of accuracy, small dosage, rapid effect and more powerful expectoration etc.

近年来，波顿致力于创新雾化大健康的生活新方式。高效提取特有的香药同源植物天然活性成分，依托团队多年的调香技术和产品开发经验，研发出安全有效、使用便捷、香氛宜人的功能电子雾化产品。

In recent years, Boton has devoted itself to creating new ways of life with atomization health. By efficient extraction of natural active ingredients of unique homologous fragrant and herb plants and relying on the team's years of fragrance technology and product development experience, functional electronic atomization products that safe, effective, convenient, and pleasant have been developed.

7月5日，波顿技术研究院柴丽琨院长带领波顿技术团队一行到访深圳市计量质量检测研究院，与认证中心蒋婷主任和几位工程师就“开展电子雾化器安全性评价”调研交流。会上，蒋主任着重介绍了电子烟认证的相关规划工作，对柴院长提出的电子雾化器在大健康领域中应用表示认同。蒋主任提出未来不含尼古丁的电子雾化产品将是市场中重要的产品形态及需求，潜力巨大。期待与波顿一起，结合相关项目，共同完成标准制定及政府项目申报等深度合作，为产业良性发展提供助力。

On July 5, Chai Likun, Director of Boton Technology Research Institute, led the Boton technical team for a visit to Shenzhen Academy of Metrology & Inspection. They carried out investigation and exchange on “safety assessment of electronic atomizers” with Director of the Certification Center Jiang Ting and several engineers. At the meeting, Director Jiang introduced relevant planning of e-cigarette certification and acknowledged the application of electronic atomizers proposed by Director Chai in the health field. Director Jiang said that in the future, nicotine-free electronic atomizers would be an important product form and demand with great market potential. Director Jiang looked forward to working with Boton, where they could jointly complete in-depth cooperation on standard formulation and government project application in combination with relevant projects, so as to drive development of the industry.

7月6日下午，研究院一行再次参观了深圳市计量质量检测研究院光明基地轻工产品与化学材料检测事业部。赵彦副部长详细介绍了光明基地的研究方向、科研项目和主营业务等内容。赵副部长指出，气溶胶作为普通消费者最直接接触的成分，计划作为后续标准制定的重要工作。对于气溶胶标准制定，赵副部长热情欢迎波顿研究院积极参与。

In the afternoon of July 6, the delegation of the institute again visited the Guangming Base Light Industrial Products and Chemical Materials Testing Division of Shenzhen Academy of Metrology & Inspection. Deputy Director Zhao Yan elaborated on the research direction, scientific research projects and main business of Guangming Base. Zhao pointed out that it was planned to place aerosols, which have the most direct contact with general consumers, as an important part of the formulation of future standards. As for the formulation of aerosol standards, Deputy Director Zhao warmly welcomed the active participation of Boton Institute.

深圳波顿新型烟草研发总监李剑政高级工程师表示：波顿从事香精香料多年，具有深厚的技术积淀与敏锐的市场洞察力，十分期待与深圳市计量质量检测研究院在气溶胶标准的制定以及其他项目的共同合作。

Senior engineer Li Jianzheng, Director of Shenzhen Boton New Tobacco Research and Development, said that Boton had been engaged in flavors and fragrances for years. It had extensive technical accumulation and sharp market insights. It was looking forward to cooperating with Shenzhen Academy of Metrology & Inspection in the formulating aerosol standards and other projects.

7月8日，波顿研究院与清华大学深圳国际研究生院（SIGS）生物医药与健康工程研究院谢伟东教授课题组第三次就新型电子雾化器在大健康领域的应用展开深入研讨。



On July 8, the Professor Xie Weidong' s research group from the Boton Institute and the Biomedical and Health Engineering Institute of Shenzhen International Graduate School (SIGS) of Tsinghua University had the third in-depth discussion on the application of new electronic atomizers in the health field.

波顿研究院将引进 SIGS 谢伟东教授团队作为技术顾问，共同组织并建立跨学科、多领域的未来新型烟草安全评价中心，联合承接政府项目申报等合作。此外，SIGS 和波顿研究院在本草雾化领域达成共识，将协助波顿研究院开展中草药系列电子雾化液的体内外功效及安全毒理评价。

The Boton Institute will engage SIGS Professor Xie Weidong' s team as technical advisor. Together, they will organize and establish an interdisciplinary and multi-field new future tobacco safety evaluation center that will jointly undertake government project applications etc. In addition, SIGS have reached a consensus with the Boton Institute in the herbal atomization field. It will assist the Boton Institute for in vitro and in vivo efficacy and safety toxicological evaluation of electronic atomization liquid for traditional Chinese herbs.

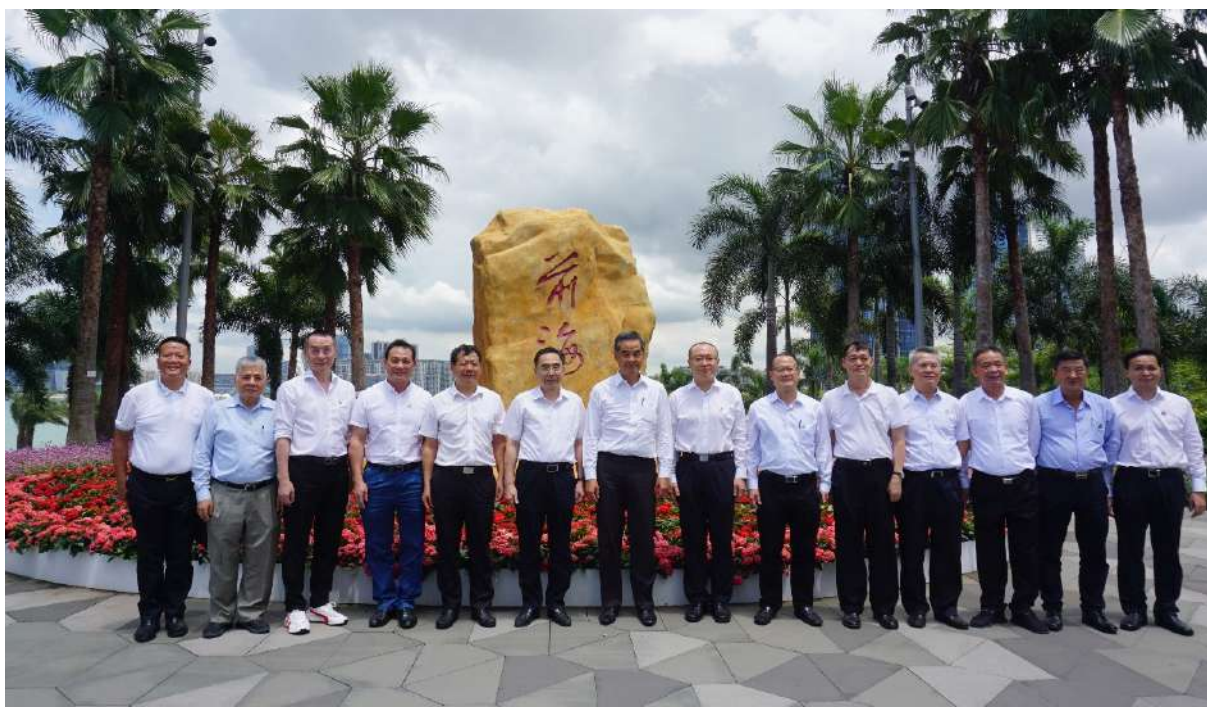
构建“雾化大健康产业”是波顿研究院目前正在实施的主要战略。以本草电子系列产品作为切入点，开启雾化大健康产业研究的新进程，实现基础材料突破，逐步向雾化类大健康迈进。在产品设计上，将以健康为首要产品属性，以好用为产品设计核心，以智能为产品基础链接，形成智能雾化大健康产业链协同闭环结构。

It is the Boton Institute' s main strategy to build an “atomization health industry” . Starting with the electronic atomization liquids for herbal medicine series, the new process of atomization health industry research has been initialized and breakthroughs in basic materials has been made, so that the Group is gradually progressing toward atomization health. In terms of product design, health will be the primary product attribute. With ease of use as the core of product design and intelligence as the basis of product connection, a collaborative closed-loop intelligent atomization health industry chain structure has been formed.

王明凡委员参加全国政协委员视察团视察 粤港澳合作发展平台建设

Member of the National Committee of the CPPCC Wang Mingfan
inspected establishment of the platform for Guangdong-Hong Kong-
Macao cooperation

文 / 行政中心
By Administrative Center



全国政协港澳台侨界别委员视察团在前海合影留念

8月24日至27日，全国政协委员、香港广西社团总会会长、中国波顿集团有限公司董事会主席兼总裁王明凡随全国政协港澳台侨界别委员视察团，到访横琴、南沙、前海、河套等地，以“粤港澳大湾区发展规划纲要落实情况及建议——共建粤港澳合作发展平台”开展主题民主监督性视察活动，并对三大平台深化体制机制创新，促进规则对接和要素跨境便捷高效流动，构建合作创新高地，增强科技创新集聚辐射功能，构建现代产业体系，推进投资贸易便利化，完善人才政策，扶持港澳青年创新创业等工作的进展情况，做了深入的视察和调研。

On August 24 to 27, a member of National Committee of the Chinese People's Political Consultative Conference (CPPCC), Chairman of the Federation of HK Guangxi Community Organizations, Chairman and President of the Board of Directors of China Boton Group Wang Mingfan, along with the visiting delegation of members from Hong Kong, Macao and Taiwan Compatriots and Overseas Chinese sectors of the CPPCC National Committee, visited Hengqin, Nansha, Qianhai, Hetao etc. They conducted themed democratic supervisory inspection on the "Implementation and Suggestions about the Development Plan Outline for the Guangdong-Hong Kong-Macao Greater Bay Area-Joint Development Platform for Guangdong-Hong Kong-Macao Cooperation and Development". They also carried in-depth observation

and investigation on work related to deepening institutional innovation on three main platforms, promoting rule alignment and convenient and efficient cross-border flow of key factors, building platforms for cooperation and innovation, enhancing concentration and emission function of scientific and technological innovation, establishing a modern industrial system, facilitating investment and trade, improving talent policies, and supporting the innovation and entrepreneurship of Hong Kong and Macao youths.

进粤港澳大湾区建设，是以习近平同志为核心的党中央作出的重大决策，是习近平总书记亲自谋划、亲自部署、亲自推动的重大国家战略。粤港澳大湾区的建设推进了全面改革开放的新格局和“一国两制”实践的行稳致远，并对实现“两个一百年”奋斗目标，实现中华民族伟大复兴具有重大意义。在反馈会上，王明凡委员提出以下三点建议：

It is a major decision made by the CPC Central Committee with Comrade Xi Jinping at its core to promote the development of the Guangdong-Hong Kong-Macao Greater Bay Area. It is a major national strategy that General Secretary Xi Jinping has personally planned, deployed, and promoted. The construction of the Greater Bay Area has promoted the new situation of full reform and opening up and the steady progress of the practice of “one country, two systems”. It is too of great significance to the realization of the “two centenary” goals and the rejuvenation of the Chinese nation. At the feedback meeting, committee member Wang Mingfan proposed the following three suggestions:

一、各合作发展平台要错位发展，取长补短，形成合力。在一国两制的框架下，港澳地区的“国际联系人”角色正愈加丰满，也迎来了国内国际双循环所带来的历史性机遇。横琴地区作为对澳发展的重要窗口，科技创新聚集效应不断显现，为澳门产业的多元化发展提供保障。横琴的发展要不断丰富两地产业协同的发展模式，同时加强国际化、法制化、便利化的营商环境建设。南沙地区幅员广阔，地处粤港澳大湾区的地理几何中心，区位优势得天独厚，不仅支撑广州的战略发展，培育新的经济增长极，更是大湾区中长期发展的重要腹地。南沙要重点建设粤港澳优质生活圈，着力打造南沙的香港社区和澳门社区，吸引更多港澳民众到大湾区就业创业生活。前海、河套地区毗邻香港，应重点发展金融业、科技业等领域，坚持高质量创新开放，高层次战略合作，打造粤港现代服务业创新合作示范区。

一、 Various cooperation and development platforms shall develop differently, draw on each other's strengths and form synergy. In the “one country, two systems” framework, Hong Kong and Macao are playing an increasingly crucial role as “international liaisons” and embracing historic opportunities brought about by the dual domestic and international cycle. As an important window for the development of Macao, there have been increasing clustering effect of scientific and technological innovation in Hengqin, which guarantees the diversified development of industries in Macao. Hengqin should be developed so that the synergized development mode of the both sides is constantly enriched. Meanwhile, an international, legalized and convenient business environment should be strengthened. Nansha is located in the geographic and geometric center of the Greater Bay Area with unique geographical advantages. It not only supports the strategic development of Guangzhou and fosters a new economic growth pole, but also serves as an important hinterland for the medium and long-term development of the Greater Bay Area. Nansha should focus on building a quality living circle in the area. More Hong Kong and Macao communities should be formed in Nansha to attract more people from Hong Kong and Macao to work, start up their business, and live in the Greater Bay Area. Qianhai and Hetao are adjacent to Hong Kong. They should focus on developing financial and science and technology industries, adhere to quality innovation and opening up and high-level strategic cooperation, so that a Guangdong and Hong Kong modern service industry innovation cooperation demonstration zone is created.



全国政协委员、中国波顿集团有限公司董事会主席兼总裁
王明凡在会议上建言献策



深圳前海

二、出台更多的利好政策，打造更加完备的政策体系，推进粤港澳大湾区高效、快速发展。一直以来，中央相关部委和粤港澳三地政府都以围绕促进粤港澳大湾区的人、财、物等要素的互联互通而努力。我们呼吁，粤港澳大湾区的发展要从“经贸合作”向“区域协同”转变，以创新开放的思维，进一步加快大湾区的建设与融通。特别是在政策制定、项目安排、平台建设等方面要有更多能及时落地的利好政策，系统性地打造更加完备的政策体系。正如习总书记的讲话精神，要以粤港澳大湾区建设、粤港澳合作、泛珠三角区域合作等为重点，全面推进内地同香港、澳门互利合作，制定完善便利香港、澳门居民在内地发展的政策措施。

二. More favorable policies should be formulated to build a more complete policy system and promote efficient and rapid development of the Guangdong-Hong Kong-Macao Greater Bay Area. The relevant ministries and commissions of the central government and the governments of Guangdong, Hong Kong and Macao have been working to promote the connectivity of people, money and materials in the Greater Bay Area. We call for transforming the development of the Greater Bay Area from “economic and trade cooperation” to “regional synergy”, as well as further accelerating the development and integration of the Greater Bay Area with an innovative and open mind. In particular, more favorable policies should be formulated timely in policy making, project arrangement and platform building, so that a more complete policy system will be formed. In accordance with the spirits of General Secretary Xi’s speech, we shall focus on the development of the Greater Bay Area, the cooperation between Guangdong, Hong Kong and Macao, and regional cooperation in the Pan-Pearl River Delta. We should also fully promote mutually beneficial cooperation between the mainland and Hong Kong and Macao, and formulate and improve policies and measures for ease of Hong Kong and Macao residents to work and live on the mainland.

三、增进港澳的民生福祉，促进人心回归，推进“一国两制”实践行稳致远。粤港澳大湾区的建设助力港澳深度融入国家发展大局，通过合作等方式进一步解决港澳的民生问题。我们要关注港澳的人心回归，做好文宣工作，呼吁更多有担当的社会力量站出来共享资源，并吸引更多港澳青年来到内地。例如“波顿粤港澳青年交流基地”自2018年底成立以来，就致力于打造港澳青年在内地创业就业的平台，以企业之力增进港澳与内地的融合。正如习总书记的长远谋划，我们要充分运用粤港澳重大合作平台，吸引更多港澳青年来内地学习、就业、生活，促进粤港澳青少年广泛交往、全面交流、深度交融，增强对祖国的向心力。最后，王明凡委员表示，粤港澳大湾区建设，是新时代国家改革开放下的重大发展战略，并有利于保持香港、澳门长期繁荣稳定。希望粤港澳大湾区越来越好，

也祝福这颗南海明珠永远绽放璀璨光芒！

三、Improve people's wellbeing in Hong Kong and Macao, encourage the people's hearts to return and promote steady and sustainable implementation of "one country, two systems". The development of the Guangdong-Hong Kong-Macao Greater Bay Area will help Hong Kong and Macao deeply integrate into the overall development of the country and further solve people's wellbeing issues in Hong Kong and Macao through cooperation etc. We should focus on the return of the hearts the Hong Kong and Macao people. By extensive publicity, we shall engage more responsible social forces to step up and share resources and attract more Hong Kong and Macao youths to the mainland. For example, since its establishment at the end of 2018, the Boton Guangdong-Hong Kong-Macao Youth Innovation and Entrepreneurship Exchange Base has been dedicated to creating a platform for Hong Kong and Macao youths to start businesses and find jobs on the mainland. It has been playing its role as an enterprise to enhance the integration between Hong Kong and Macao and the mainland. In line with General Secretary Xi's long-term plan, we shall make full use of the major cooperation platforms between Guangdong, Hong Kong and Macao to attract more Hong Kong and Macao youths to study, work and live on the mainland. By extensive communications and in-depth exchanges can they become more attracted to the motherland. Finally, committee member Wang Mingfan said that the development of the Greater Bay Area is a major development strategy of China in the new era of reform and opening-up, which is conducive to maintaining long-term prosperity and stability of Hong Kong and Macao. He wished for the Guangdong-Hong Kong-Macao Greater Bay Area a brighter future and eternal glory as the pearl of the South China Sea.



火器金牌店长 做行业的佼佼者 打造优秀团队

Golden Ammo Store Owner Builds Excellent Team as Industrial Leader

文 / 华商 廖凯茵
By Huashang Liao Kaiyin



自 2003 年国内首款电子雾化器诞生至今，中国成为了全球电子雾化器市场的第一大生产国和出口国。

Since the birth of the first domestic electronic atomizer in 2003, China has evolved into the largest producer and exporter of global electronic atomizer market.

近几年，随着电子雾化势力的日益兴起，国内电子雾化器市场被迅速点燃，如惊蛰春雷唤醒了国内电子雾化器行业的春天。

In recent years, with the rise of electronic atomization force, domestic electronic atomizer market was rapidly ignited, arousing the spring of domestic electronic atomizer industry.

陆陆续续的，一大批凭着敏锐商业嗅觉的“拓荒者”，敢为人先地入局了这片潜力静待挖掘的电子雾化器蓝海市场。这其中，就有火器优秀门店店主代表——老咖。

One after another, a large number of “pioneers” with a sharp sense of commercial smell make inroads into the blue ocean market of electronic atomizers with potential to be tapped. Among them, there is a representative of excellent ammo store owners——Lao Ka.

有多年零售业从业经验的老咖，曾是国内某注油式电子雾化器品牌的店主，作为行业“老炮儿”，在看准了换弹式电子雾化器市场逐渐火热的趋势后，2017 年，老咖、Fox、ken、林帅在福建泉州万达公馆开了属于他们的第一家火器门店。

Lao Ka was once the store owner of a domestic oil-filled electronic atomizer brand, involving in retail industry for years. As an industrial “Mr. Six”, after targeting at gradually booming trend of replaceable electronic atomizer market, Lao Ka, Fox, Ken and Lin Shuai opened their first ammo store in Fujian Quanzhou Wanda Mansion in 2017.



从大海捞针，到选择火器

From Finding Needle in Haystack to Choosing Ammo

“流量为王的时代正在过去，产品为王的时代已经到来。”这对从事零售业的老咖来说，感受尤其深刻。

“The era when traffic is king is elapsing, and the era when product is king has come.” This is particularly impressive for Lao Ka engaged in the retail industry.

产品为王，品质当先，产品质量过硬是老咖选择电子雾化器品牌的首要条件。“当时我测试了很多款市面上的换弹式电子雾化器，因为我坚信选择比努力更重要，前期选对品牌是关键，高质量的产品品质才可以支撑我们走得更远！所以我的测试不仅仅是试抽，还将雾化杆和雾化弹拆开，研究里面的构造，从内到外将产品的油仓结构和雾化设计等分析透彻。”

Since product is king, quality first, excellent product quality is the top concern for Lao Ka to choose the electronic atomizer brand. “At that time, I tested many kinds of replaceable electronic atomizers on the market, because I believed choice was more important than hard work, right choice of brand at initial stage was the key, and only high-quality product could support us to go further! Therefore, I not only tried to smoke, but also dismantled atomization rod and cartomizer to probe into the structure inside, and thoroughly analyzed oil tank structure and atomization design of products from inside out.”

从拆雾化杆到拆雾化弹，在这看似“大海捞针”的拆机择优尝试中，老咖拆卸掉的产品不下百套，他一直寻找的、值得长期作战的品牌也终有答案。

From dismantling atomization rod to dismantling cartomizer, amidst this dismantling and selective attempt seemingly “finding needle in haystack”, Lao Ka disassembled more than 100 sets of products, and finally came up with the answer for the sought-after brand that deserved long-term battle.

“我们是从注油式电子雾化器一路走来的，热衷于DIY的探索研究。店里接触的每款产品都要经过我们的筛选测试才能上架销售，只有把筛选做在客户前面，客户才不会把我们筛选掉，我们所做的就是择优、分享。产品自身具有竞争力，客户拿在手上便也不惧竞品间的对比，那客户粘性就来了，”在谈及为何选择火器时，老咖拿起手中的ammo渐变款和迷彩款问，“您觉得哪款更好？”“我觉得都好为何要让客户二选一呢？毕竟都是日常消费品，一次买两把，充电更替使用嘛。”

“We came all the way from oil-filled electronic atomizers, keen on DIY exploration and research. Every product in the store must pass our screening test before placing on the shelf for sale. Only by screening ahead of customers, customers will not screen us out. What we do is to select the superior and share. The product is competitive per se, and if customers are not afraid of comparison with competing products when they hold it in hands, here comes customer viscosity.” When talking about why to choose ammo, Lao Ka picked up the gradient and camouflage versions of ammo in hands and asked, “Which one do you prefer?” “I think both are good, so why ask the customer to choose one? After all, they are daily goods, and buy two at a time to use alternatively while recharging.”

经过开店前的长期亲自考察，老咖非常认可火器的品牌理念和市场打法，更是对自己的火器门店充满信心。在这个方面，老咖看重产品品质的想法，与火器一直秉持的“产品力是品牌的第一生命力”的品牌理念不谋而合。

After a long-term personal investigation before opening the store, Lao Ka extremely recognized the brand philosophy and market play of ammo, even full of confidence in his ammo store. In this respect, Lao Ka's idea of highlighting product quality coincides with the brand philosophy of “product power is the first vitality of brand”.

“我一直坚信对的选择，才能让努力更有价值。所以在做最终的选择之前，我对火器的产品和品牌进行了深入的了解，得知火器是中国第一家香精香料上市企业波顿集团旗下的电子雾化器品牌，而且拥有电子雾化器的全产业链，产品的品质和供应就有了坚实的保障，这也符合了我对产品品质的期待。”

“I always believe that only the right choice makes effort more worthwhile. So before making a final choice, I gained insights into ammo product and brand, and learned that ammo was the electronic atomizer brand under Boton Group, the first listed company of flavors and fragrances in China, and its entire industrial chain of electronic atomizers firmly guaranteed the quality and supply of products, also in line with my anticipation on the quality of products.”



作为一名玩转电子雾化器的“老炮儿”，转战火器的老咖充分发挥先前从事零售业的经验和优势，和团队一起，将门店运营得如鱼得水。

As “Mr. Six” good at playing with electronic atomizers, Lao Ka who shifted to ammo fully drew on his previous experience and advantages in retail industry, and ran the store together with his team just like a fish in water.

创新模式，把好钢用在刀刃上

Innovating Model, Use the Best Steel to Make Knife Edge

对于门店运营，老咖与他的团队——贪呷社区，有一套独特缜密的打法。

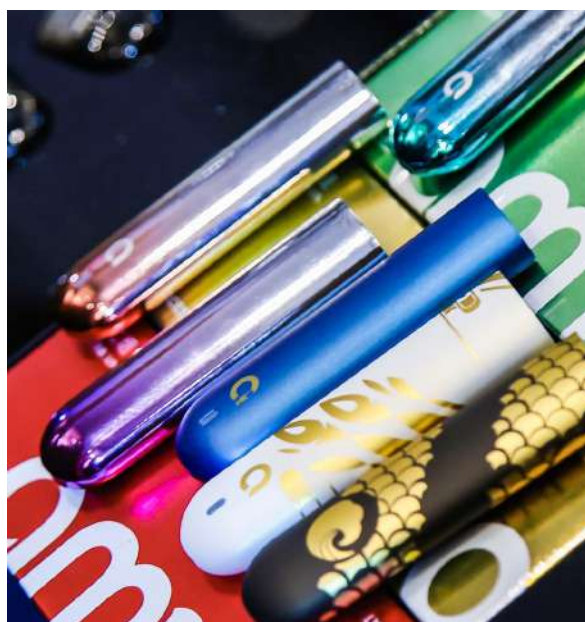
With regard to store operation, Lao Ka and his team —— Make Money Community have a unique and rigorous play.

“我们打造了类似小型社区的营销模式，将时尚潮牌、美式男士理发等多元业务一体化，从来店消费的客户群体中，寻找高质量的精准客户并转化成火器门店的用户。这样一来，整个客户画像就趋向统一，潜在用户也抓得比较精准，后续就可以针对性地接待来店客人，稳扎稳打，做出影响力。”

“We have created a marketing model similar to small community, integrating fashion brand, American-style barber and other diversified businesses, seeking high-quality accurate customers among the customer groups consuming in the store and turning them into users of ammo store. In this way, the whole customer portrait tends to be unified, and potential users are targeted more accurately as well, so as to greet customers purposefully and make an impact steadily in the future.”

创新模式，精准定位，无论在什么领域，老咖总能摸索出一种适合自己的模式，然后结合多年经验，和团队一起，全力出击。

Innovative model and precise positioning, regardless in which field, Lao Ka can always work out a kind of model fit for him, and then launch an all-out attack with the team, in conjunction with years of experience.





有充足粮草，才有放手一搏

Adequate Food and Fodder Ahead of Struggle

老咖在采访中曾提到，他也是看到了火器在品牌力与扶持力的平衡与优势，才有了勇敢去闯的决心。

Lao Ga mentioned in the interview that he also saw the balance and advantage of ammo brand power and support power, before determined to breaking through with courage.

“品牌方的扶持力度对店主来说真挺重要的，因为我们团队选择一个品牌的初衷就是要做长久的生意，而不是一年转做多个品牌的短期投资。”老咖在这个行业已经做了7年，越来越认可一个观点：只有品牌方给予足够的支持，线下门店才能开得更长久。

“The level of support from brand side is really important for the store owner, because the original aspiration for our team in choosing a brand is to build a long-lasting business, rather than a short-term investment in multiple brands in a year.” Serving this industry for 7 years, Lao Ka increasingly endorses a viewpoint: only with sufficient support from brand side, offline stores will survive for a longer time.

“兵马未动，粮草先行，多亏了火器给予的充足粮草，我们才能在一线放手去博，勇敢去闯！也希望能够有更多志同道合的伙伴加入我们，一起踏上新征途。”老咖在谈起品牌政策时，兴奋地说。

“Food and fodder should go ahead of troops and horses. Thanks to the adequate food and fodder from ammo, we're able to fight freely and break through with courage! Hopefully more like-minded partners will also join us, and embark on the new journey together.” Lao Ka said excitedly when talking about brand policy.

其实，火器今年除了推出“超级招商季”，提供十大扶持政策，全程指导运营，为每一位店主提供管家式服务外，还在渠道运营层面也进行了多种尝试，面向全国开始招募城市合伙人，全面开放3C数码类、新消费零售类、多品牌集合店等渠道类型。

In fact, this year, beyond launching the “Super Investment Promotion Season”, ammo delivers 10 major supportive policies to guide operation throughout the process, provides each store owner with steward service, and also makes attempts at the channel operation level to start recruiting city partners nationwide, and fully open 3C digital category, new consumer retail category, multi-brand collection stores and other channel categories.

作为福建泉州土生土长的本地人，老咖和他的团队将对当地消费习惯的深度洞察，转化成针对泉州市区客户的精准投放和服务模式，打出一套漂亮的创新营销组合拳。

As natives of Quanzhou Fujian province, Lao Ka and his team will transfer profound insights into local consumption habits to precise delivery and service model oriented at customers in Quanzhou's urban area, and play a set of brilliant innovative marketing combination.

适时跟进社会潮流迭代、创新运营思维的良性合作模式，才能更好地释放品牌活力，实现共赢的局面，这不是空想，而是火器用实际行动，落实到每一家门店及每一位火器店主身上的行业事实。

The positive cooperative model that keeps abreast of social trend in due time with innovative operation mentality will better bring about brand vitality and achieve win-win scenario, which is not a fantasy, but industrial fact of ammo's actual actions on every store and every ammo store owner.



2021年，新的行业破局点

2021, New Industrial Breaking Point

“荣誉不是终点，而是新的出发点。”

“Honor is not a destination, but a new beginning.”

采访到最后，老咖向我们表示，目前他们的团队在泉州市共有4家门店，然而目标并不止步于此：正着手准备的1家店顺利开业，持续洞察市场行情，稳中求进，开拓新的局面。

At the end of interview, Lao Ka told us that their team had a total of 4 stores in Quanzhou city, but the goal was more than that: to successfully open one store under preparation, continually gain insights into market, seek progress in stability, and open up a new horizon.

无论是从行业专业角度分析，还是来自券商的预判，长远来看，电子雾化器行业未来依旧可期，火器品牌方也将和火器门店携手并进，共同迈向新征程。

Whether to analyze from industrial professional perspective or forecast by the brokerage, in the long run, electronic atomizer industry still has a promising future, and ammo brand side will also join forces with ammo stores to move toward a new journey together.

波顿旗下品牌 JeX 犀利亮相第五届 中阿国家博览会

Boton Brand Jex Unveiled at 5th China Arab States Expo

文 / 行政中心
By Administrative Center



2021年8月19日，第五届中国——阿拉伯国家博览会在我国宁夏银川开幕。为了响应国家“一带一路”号召，增进中阿合作与友谊，中国波顿集团组团参加了本次博览会，并在此博览会上隆重亮相了中国波顿集团旗下自有知识产权的品牌 JeX 犀利，据悉，这是本次博览会上唯一一家参展的电子雾化器品牌。

On 19 August 2021, the 5th China Arab States Expo opened in Yinchuan Ningxia China. To echo with national call of the “Belt and Road”, and enhance cooperation and friendship between China and Arab States, China Boton Group formed a group to attend the expo, and presented its affiliated brand JeX with proprietary intellectual property rights. According to report, this is the only electronic atomizer brand displayed in this expo.

本届博览会由商务部、中国贸促会、自治区政府共同主办，以“深化经贸合作，共建‘一带一路’”为主题，深化能源、产能、基建等传统领域合作，拓展 5G、人工智能、航空航天等新兴技术领域合作。

This expo is co-hosted by the Ministry of Commerce, China Council for the Promotion of International Trade and Autonomous Region Government, to deepen cooperation in traditional fields of energy, production capacity, infrastructure and more, and expand cooperation in emerging technology fields such as 5G, artificial intelligence and aerospace under the theme of “deepening economic and trade cooperation, and co-building the ‘Belt and Road’”.

据了解，波顿集团始终坚持以“产业报国”为理念，用实际行动诠释“工匠精神”。30年峥嵘岁月，30年行业坚守，30年匠心不变，波顿正向着民族企业愿景不懈奋斗。此次波顿集团旗下全资品牌 JeX 犀利亮相展会，作为唯一的参展雾化器品牌，引发行业及市场的关注，现场吸引了众多海内外合作伙伴。



Boton Group is known to always insist on the philosophy of “serving the country with industry” , and interpret “craftsman spirit” with practical actions. After 30 years of painstaking efforts, 30 years of industrial adherence and 30 years of constant ingenuity, Boton is persistently struggling toward the vision of national enterprise. This time, JeX, a wholly-owned brand of Boton Group, appeared in the exhibition as the only participating atomizer brand, arousing attention of the industry and market, attracting numerous partners at home and abroad on site.

目前，JeX 犀利已推出丰富的系列产品，包括换弹产品系列，能够将波顿集团生产的各种高品质口味雾化液进行精准的还原。除此之外还有“恒”、“变”、“幻”、“元”等一次性产品，“0 尼古丁产品——本草点子”，产品类型丰富多样。

At present, JeX has launched an extensive line of products, including replaceable product series, to accurately restore atomizing liquid of various high-quality flavors produced by Boton Group. In addition, diverse product categories are available including “Constant” , “Change” , “Magic” , “Dimension” and other disposable products, as well as “zero nicotine product - Herbal Ideas” .

目前，波顿集团正积极布局雾化大健康战略，构建“雾化大健康产业”。以本草电子系列产品作为切入点，开启雾化大健康产业研究的新进程。

Nowadays, Boton Group is actively deploying the atomization health strategy, building “health industry of atomization” , and stepping on the new journey of atomization health industry research, with herbal electronic serial products as the starting point.



波顿携手央企深耕雾化领域

Boton Joins Forces with Central Enterprises to Penetrate in Atomization Sector

文 / 行政中心

By Administrative Center



2019年,南方周末在国家呼吸系统疾病临床医学研究中心(广州医科大学附属第一医院)、广州呼吸健康研究院、呼吸疾病国家重点实验室和上海市医疗器械检测所、国家药监局呼吸麻醉设备重点实验室的学术支持和技术指导下发布了《制氧机家庭使用指导蓝皮书2019》),希望能够帮助患者更好地进行家庭氧疗的辅助治疗,唤起公众对呼吸健康的关注,呼吁公众正视呼吸疾病。

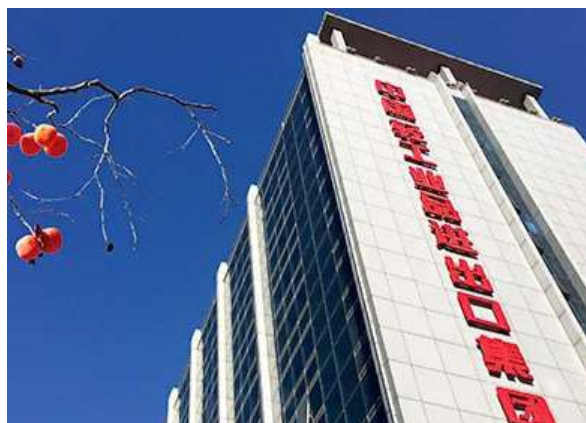
In 2019, Southern Weekend published the Blue Book for Guidance on Family Use of Oxygen Generator 2019 under academic support and technical guidance of National Clinical Research Center for Respiratory Disease (the First Affiliated Hospital of Guangzhou Medical University), Guangzhou Institute of Respiratory Health, State Key Laboratory of Respiratory Disease, Shanghai Medical Device Test Center and NMPA Key Laboratory for Respiratory Anesthesia Device, hopefully to help patients better conduct auxiliary treatment of home oxygen therapy, trigger the public interest in respiratory health, and appeal the public to face up to respiratory disease.

近日,波顿集团旗下深圳市源格林科技有限公司与中轻集团旗下中轻深圳进出口有限公司签订了品牌战略合作协议。

Recently, Shenzhen Ygreen Technology Co., Ltd, a subsidiary of Boton Group, signed the Agreement on Strategic Cooperation of Brand with China Light Shenzhen Import & Export Co., Ltd, a subsidiary of China Light Group.

据了解，中国轻工业品进出口集团有限公司是中国通用技术（集团）控股有限责任公司旗下的子公司，是国内外贸轻工行业中，一直位居全国进出口 500 强前列的大型国有企业。本次合作的产品将服务于“国民大健康”产业，以“草本雾化”作为切入点，发展生物健康新零售业务，用一系列“科技 + 草本 + 雾化 + 健康”产品，助力“健康中国”更好更快发展。

According to report, China National Light Industrial Products Import and Export Group Co. Ltd is a subsidiary of China General Technology (Group) Holding Co., Ltd, and a large state-owned enterprise ranking among top 500 national import and export in domestic and foreign trade light industry. This time, cooperative products will serve “national health” industry, proceed from “herbal atomization” to develop new retail business of biological health, and promote better and faster development of “Health China” by an array of “technology + herbal + atomization + health” products.



波顿集团作为国家级高新科技企业，坚持不懈加大科技研发投入，将“国民大健康”列为企业发展的重要课题，从草本雾化、新型功能性雾化产品、天然致香物质研究与开发、植物功效成分开发与活性测试、分析检测等方向开发项目。

As a national high-tech enterprise, Boton Group persistently increases investment in technical R&D, specifies “national health” as an essential subject of corporate development, and develops projects in terms of herbal atomization, new functional atomization products, natural aromatic substance R&D, development and active test of plant efficacy components, analytical testing and other directions.

未来，波顿集团将继续深耕大健康产业，坚持自主创新为主，引研结合，与龙头企业强强联手，以草本雾化研发为基础方向，以植物功效成分开发与活性测试、分析检测为突破口，兼顾产品质量提升，优势产品的二次开发，面向人民生命健康，打造国内一流大健康科技企业。

In the future, Boton Group will continually take roots in health industry, focus on independent innovation, combine introduction and research, carry out win-win cooperation with leading enterprises, with herbal atomization R&D as basic direction, development and active test of plant efficacy components, analytical testing as breakthrough points, take into account product quality improvement and secondary development of advantageous product, orient at people’s life and health, and build a first-class health technology enterprise in China.



波顿集团召开职能部门 2021 年上半年工作总结会议

Boton Group Held Work Summary Meeting of Functional Departments in the First Half of 2021

文 / 行政中心
By Administrative Center

7月29日，波顿集团召开职能部门2021年上半年工作总结会议，本次会议由集团董事副总裁杨迎春主持。全国政协委员、中国波顿集团有限公司董事长兼总裁王明凡出席会议并讲话，集团副总裁强耀锋、范敬宇以及集团总部全体人员参加会议。

On July 29, Boton Group held a work summary meeting of functional departments in the first half of 2021, presided over by Group Director and Vice President Yang Yingchun. Wang Mingfan, a member of the National Committee of the Chinese People's Political Consultative Conference (CPPCC) and Chairman and President of China Boton Group, attended the meeting and delivered a speech, and Group Vice President Qiang Yaofeng, Fan Jingyu and all staff of Group Headquarter attended the meeting.

会议首先由集团各部门、各中心负责人分别汇报了上半年任务完成情况以及下半年重点工作任务；接着集团副总裁强耀锋、范敬宇，集团董事副总裁杨迎春对集团工作存在的不足和面临的难题进行分析，同时围绕如何建立人才梯队，稳步推进、加快进度、完成任务及重点关注的问题等提出了想法与对策。

At the meeting, leaders of all the Group departments and centers reported tasks completed in the first half year and key tasks in the second half year respectively; then Group Vice President Qiang Yaofeng, Fan Jingyu, as well as Group Director and Vice President Yang Yingchun analyzed shortcomings

and problems in the Group work, and put forward ideas and countermeasures on how to establish talent echelon, steadily advance, expedite progress and complete tasks, as well as key concerns.

最后，全国政协委员、中国波顿集团有限公司董事长兼总裁王明凡充分肯定了集团上半年取得的成绩，深入分析了集团总体发展面临的形势任务，对做好下一步经营作出了全面部署，并对下半年工作提出四点要求。

Finally, Wang Mingfan, a member of the National Committee of the Chinese People's Political Consultative Conference (CPPCC) and Chairman and President of China Boton Group, fully recognized achievements of the Group in the first half of year, deeply analyzed circumstances and tasks for overall development of the Group, made a comprehensive deployment for the next step of operation, and put forward four requirements for the work in the second half of year.

一是加强队伍建设。围绕基层单位主责主业优化岗位设置，科学设定专业技术岗位比例和资格条件，提出切实可行的人才培养计划，激发员工的内生动力。持续优化班组整合，集中集团优势力量，助推集团及分子公司的高质量发展。

Firstly, reinforce team building. Optimize post setting around primary responsibility and business of grass-root entities, scientifically set forth the proportion and qualification criteria of professional technical posts, propose feasible talent training plan, and stimulate internal driving force of employees. Continually optimize team integration, gather superior strength of the Group, and boost high-quality development of the Group, its branches and subsidiaries.

二是集团要强化服务意识，提高对分子公司的保障能力，提高文化制度建设。提升集团对分子公司的指导服务统筹协调能力，科学预算合理招采，完善生产管理，事前及时准备前期手续完备，事中指导协助解决困难，事后协助督导资料验收评审回款等工作。

Secondly, the Group must strengthen a sense of service, improve the assurance capability for branches and subsidiaries, and enhance cultural system construction. Upgrade the Group's capability of service guidance and overall coordination of branches and subsidiaries, alongside scientific budget, rational bidding and procurement, improve production management, promptly prepare in advance with complete preliminary procedures, guide during the event to help solve difficulties, and assist in supervising data inspection, acceptance, review, payment collection and other tasks afterwards.

三是提高管理标准。各级管理干部要增强责任感及担当意识，要敢于探索创新思路、模式，要真诚的直言纳谏，要勇于承担责任。全面理清、完善管理流程，把住规矩意识和底线意识。主动思考管理创新，做到事前谋划、事中修正、事后总结的良性循环。

Thirdly, raise management standard. Management cadres at all levels must enhance their sense of responsibility and undertaking, dare to explore innovative mentality and model, sincerely speak out and open to ideas, and bravely shoulder responsibility. Clarify and improve management process on all fronts, hold the awareness of rules and bottom line, take the initiative to think about management innovation, and achieve virtuous circle of planning in advance, correcting during the event and summarizing afterwards.



四是解放思想，大胆创新求变，深化波顿创造理论。要科学的探讨产业转型升级，适应市场形势，调整完善产业发展战略方向，发挥行业引领作用，理清发展思路。以提升市场适应力、竞争力，推动集团的长久发展。

Fourthly, emancipate the mind, boldly innovate, seek change and deepen Boton's creation theory. Scientifically delve into industrial transformation and upgrading, adapt to market circumstances, adjust and improve strategic direction of industrial development, play the leading role of industry, and straighten out development mentality, to enhance market adaptability, competitiveness, and spur long-term development of the Group.

2021年，是中国共产党成立100周年，是“十四五”规划开局之年，也是波顿成立30周年，我们将立足新发展阶段，贯彻新发展理念，构建新发展格局，持续奋斗，谱写华章，以更优异的成绩向建党100周年献礼！

2021 marks the 100th anniversary of the founding of the Communist Party of China (CPC), the first year of the "14th Five-Year" Plan and the 30th anniversary of the founding of Boton. Standing at the new stage of development, we will implement new development philosophy, build new development pattern, make unrelenting efforts, write a glorious chapter, and pay tribute to the 100th anniversary of the founding of the CPC with more outstanding achievements.

波顿集团 2021（夏季）技术大会圆满召开

Boton Group 2021 (Summer) Technology Conference Held Successfully

文 / 行政中心
By Administrative Center



7月30日，波顿集团2021（夏季）技术大会在集团总部三楼多功能厅隆重举行。全国政协委员、中国波顿集团有限公司董事长兼总裁王明凡出席此次大会，全国各地分子公司通过视频会议形式参加本次活动。

On July 30, Bolton Group 2021 (Summer) Technology Conference was convened in multi-functional hall on the third floor of Group Headquarter. Wang Mingfan, a member of the National Committee of the Chinese People's Political Consultative Conference (CPPCC) and Chairman and President of China Boton Group, attended this conference, and nationwide branches and subsidiaries joined in this event through video conference.

下午两点，波顿集团2021年（夏季）技术大会正式开始，本次大会以“守正创新 力开新局”为主题，针对“大健康技术”、“新型烟草”、“新材料技术”以及“技术应用”四个方向进行学术交流，并为2020年（冬季）技术大会获奖人员颁发奖项。

At 2 pm, Boton Group 2021 (Summer) Technology Conference officially began. With the theme of “cultural inheritance and innovation to broaden new horizon”, this conference carried out academic exchanges in four directions of “health technology”, “new tobacco”, “new material technology” and “technical application”, and awarded prize winners of the 2020 (Winter) Technology Conference

深圳波顿副总经理郑凯清作为本次技术大会的评委组的副组长，他针对本次技术大会演讲人的成果汇报作了总结和点评，肯定了各位研发技术人员的研发成果，客观分析了存在的不足之处和需改进的地方，并对今后的技



王明凡董事长发表重要讲话



技术大会专家点评环节

术创新寄予更高的期望。评委们的专业点评，让研发技术人员受到鼓舞和更加自信，为技术研发的深入开展提供宝贵的经验。

As the Deputy Team Leader of the Technology Conference Judge Panel, Zheng Kaiqing, Deputy General Manager of Shenzhen Boton, summarized and commented on performance reports from the speakers of this technology conference, acknowledged results of R&D technicians, objectively analyzed existing shortcomings and room for improvement, and showed higher expectations on future technological innovation. R&D technicians were encouraged by professional comments from the judges and turned more confident, providing valuable experience for in-depth technical R&D.

王明凡董事长在本次大会中作了重要讲话。他强调，科学技术是第一生产力，创新是引领发展的第一动力。技术人员要强化重大专项研究力度，以研促产，以产带研，把握关键技术，创造具有国际先进水平的产品。面对新形势，新市场，要保持清醒的头脑，明确的发展方向，坚持正确的企业战略！实现集团“百年强企”的伟大目标。

Chairman Wang Mingfan delivered important speech on this conference. He laid stress on science and technology as primary productive force and innovation as primary driving force to lead development. Technicians must intensify major specialized research, promote production by research, guide research by production, master key technologies, and create globally advanced products. Facing new circumstances and new markets, keep a clear mind, identify development direction, and adhere to correct corporate strategy! Achieve the Group's great goal of "centenary powerful enterprise".

“功以才成，业由才兴”。未来，波顿集团将牢固树立“人才是第一资源，抓人才就是抓发展”的理念，把人才工作作为一项十分紧迫的战略任务来研究、谋划并付诸行动，为加速推进新时代现代化的波顿建设而释放不竭动力。

As a Chinese saying goes, "Success depends on talents, and business prospers by talents" In the future, Boton Group will firmly establish the philosophy of "Talent is the first resource, and seizing talent is to seize development", regard talent work as a very urgent strategic task to study, plan and put into action, and release endless power to accelerate the construction of modern Boton in the new era.



生物化妆品原料最新趋势

Latest Trend of Bio-Cosmetic Ingredients

文 / 波顿 (上海) 生物技术有限公司 – 副总监 赵焜

By Boton (Shanghai) Biotechnology Co., Ltd – Deputy Director Zhao Kun

2020年, 出门佩戴口罩、见面保持距离、线上远程办公……, 新冠肺炎疫情下, 这些逐渐成为人们生活中的新常态, 新冠肺炎将卫生健康和福祉推向了消费者和行业的聚光灯下, 消费者越来越注重健康护理, 化妆品行业发展呈现了一些新趋势:

In 2020, wearing masks when going out, keeping distance when meeting, and telecommuting online... During the COVID-19 epidemic, these become the new normal in people's life, and COVID-19 has pushed hygiene, health and well-being under the spotlight of consumers and industries, consumers pay more attention to healthcare, and cosmetic industry shows some new trends:

1. 化妆品行业迎来原料创新的新时代

1. Cosmetic industry embraced a new era of ingredient innovation

2020年6月29日, 国务院公布了《化妆品监督管理条例》(简称条例, 自2021年1月1日起施行)。《条例》规定化妆品原料分为新原料和已使用的原料, 国家对风险程度较高的化妆品新原料实行注册管理, 对其他化妆品新原料实行备案管理。将一些特殊用途以外的新原料由注册改为备案, 为新原料的研发、使用和现有原料目录的更新建立了有效途径, 结合原料端的支持, 研究新功效化妆品或将成为产品研发的全新方向。

On 29 June 2020, the State Council promulgated the Regulations on the Supervision and Administration of Cosmetics (hereinafter referred to as the Regulations, effective from 1 January 2021). The Regulations stipulate that cosmetic ingredients are divided into new ingredients and used ingredients. The state implements registration management for new cosmetic ingredients with higher risks and filing management for other new cosmetic ingredients. Some new ingredients other than special use are changed from registration to filing, establishing an effective channel for the R&D and use of new ingredients, as well as update of existing ingredient directory. Combined with the support of ingredients, the research on new efficacy cosmetics may become a new direction of product R&D.

据报道, 日本常用的原料大概有 18,000 种, 其中普通化妆品 15,000 种, 3,000 种左右为医药部外品, 宣称

具有美白等特殊功效（相当于我们的特殊化妆品）。之前，我国对化妆品行业原料目录管理非常严格，导致很多国外化妆品进入中国不得不进行配方修改，这严重阻碍了我国化妆品行业研发和新品开发的进程。如今，将一些特殊用途以外的新原料由注册改为备案，为新原料的研发、使用和现有原料目录的更新建立了有效途径，结合原料端的支持，研究新功效化妆品或将成为产品研发的全新方向，相信 2021 年以后更多的进口原料会蜂拥而至，引进中国市场。

According to report, there are about 18,000 kinds of ingredients commonly used in Japan, of which 15,000 are common cosmetics, and about 3,000 are non-medical products claiming special effects such as whitening (equivalent to our special cosmetics). Previously, China imposed rigorous cosmetic industry ingredient directory management, and as a result, many foreign cosmetics had to modify formula before making inroads in China, which seriously hindered the R&D of Chinese cosmetic industry and new product development process. Nowadays, some new ingredients other than special purpose are changed from registration to filing, establishing an effective channel for the R&D and use of new ingredients, as well as update of existing ingredient directory. Combined with the support of ingredients, the research on new efficacy cosmetics may become a new direction of product R&D. I believe that from 2021 onwards, more imported ingredients will flock to the Chinese market.

2. “成分党”的流行，为原料品牌化发展带来差异化的机遇

2. The popularity of “composition party” brings differentiated opportunities for brand development of ingredients

2020 年，消费市场流行成分党，“成分党”是指对化妆品成分很关注的消费者群体，这个群体多是 90 后、95 后、00 后，具有高知识水平，根据自己的需要关注化妆品及其成分。因此，化妆品厂家也顺应这一趋势，宣传化妆品时，多以成分加强宣传，“成分党”的流行，为原料厂商的品牌化发展带来差异化的机遇。

In 2020, composition party prevailed on the consumer market. “Composition party” refers to the consumer group concerned about cosmetic ingredients. This group is mostly post-90s, post-95s and post-00s, with high knowledge level, and focuses on cosmetics and ingredients based on their own needs. Therefore, cosmetic manufacturers also follow this trend, to mostly strengthen publicity of ingredients during the publicity of cosmetics. The popularity of “composition party” brings differentiated opportunities for brand development of ingredients.

2018-2024 年期间，全球化妆品原料市场将以 5.3% 的复合年增长率增长。功效性化妆品原料是“成分党们”最关注的成分。数据显示，由于亚洲人口老龄化以及环境污染加剧等影响，中国、日本和韩国消费市场排名前三的成分为抗衰老、美白祛斑和抑制敏感肌。功效性原料的市场发展很快，全球化妆品功效原料市场总量约 22 亿美金，



中日韩三国市场总量约为 6.75 亿美金，其中生物技术类，植物提取物类，维生素类，功能肽类的市场份额最大，皮肤微生态市场潜力最大，增速最快。

The global cosmetic ingredient market is expected to grow at a CAGR of 5.3% from 2018 to 2024. Efficacy-based cosmetic ingredients are the top concern of “composition parties”. According to data, affected by aging population, worsening environmental pollution and so on in Asia, top three compositions on the consumer market of China, Japan and South Korea are anti-aging, whitening and freckle removal, suppressing sensitive muscles respectively. The market of efficacy-based ingredients is developing rapidly, total global market volume of efficacy-based cosmetic ingredients is approximately USD 2.2 billion, and total market volume of China, Japan and South Korea is approximately USD 675 million, of which biotechnology, plant extract, vitamin and functional peptide account for the largest market share, and skin micro-ecology market witness the greatest potential and the fastest growth rate.



3. 皮肤微生态研究及微生态护肤的流行

3. Skin micro-ecology research and micro-ecological skincare popularity

皮肤微生态——由细菌、真菌、病毒、螨虫和节肢动物等各种微生物与皮肤表面的组织、细胞及各种分泌物、微环境等共同组成的生态系统，多年来一直是科学研究的焦点。皮肤屏障结构主要由角质细胞、细胞间脂质及水脂膜三部分构成，一般会用“砖墙结构”来比喻皮肤屏障的功能。角质层中的角质细胞构成“砖块”，细胞间脂质构成“灰浆”，这种细胞间脂质填充在层层叠叠的角质细胞中的复层板结构维持着人体正常的表皮屏障功能。

Skin micro-ecology——ecosystem composed of bacteria, fungi, viruses, mites, arthropods and various microorganisms, skin surface tissues, cells and various secretions, microenvironment and the like has been the focus of scientific research for many years. The skin barrier structure is mainly composed of keratinocytes, intercellular lipids and water lipid membrane, and “brick wall structure” is generally used as a metaphor of the skin barrier function. Keratinocytes in stratum corneum form the “bricks”, intercellular lipids form the “mortar”, and such composite laminate structure of intercellular lipids filled in layers of keratinocytes maintains normal epidermal barrier function of human body.

当皮肤微生态平衡时，皮肤会拥有天生的抵御力、保护力、修护力。过度清洁、护肤不当、环境变化、激素刺激等，都可能打破皮肤微生态平衡，干燥、敏感、痤疮、粉刺、色斑等问题就会找上门来。而微生态护肤，就是帮助皮肤有益菌生长，让皮肤微生态重归平衡状态，修护皮肤屏障，从而改善干燥、敏感、痤疮、粉刺、色斑等问题等皮肤问题，达到护肤效果。

When the skin micro-ecology is balanced, the skin will have innate resistance, protection and repair power. Excessive cleaning, improper skincare, environmental change, hormone stimulation and so forth may break the balance of skin micro-ecology, and dryness, sensitivity, acne, pimple, spot and other problems will arise. Micro-ecological skincare is to help with the growth of beneficial bacteria on the skin, restore balance state of skin micro-ecology, and repair skin barrier, so as to improve dryness, sensitivity, acne, pimple, spot and other skin problems, and achieve skincare effect.

目前，国内外很多化妆品厂商都已经生产微生态护肤概念的产品，并且受到广大消费者的喜爱。兰蔻新肌底修护舒缓精华液，加入了二裂酵母发酵产物溶胞物，具有很强的抗免疫抑制活性，并能促进 DNA 修复，保护皮肤免受紫外线损伤；SK II 神仙水使用了半乳糖酵母样菌发酵产物滤液（商品 PITERA），主要作用是保湿剂、皮肤调理剂，具备美白祛斑和抗氧化功效；爱茉莉太平洋出品的 IOPE 精华液，添加了乳酸杆菌发酵胞溶产物，菌种来源于酸奶，主要功效为保湿、皮肤调理、抗氧化，产品主要涉及面膜、面霜、精华液、眼霜等。

At present, many cosmetic manufacturers at home and abroad have manufactured products with micro-ecological skincare concept, and won favor of consumers. Lancome Genifique Sensitive Youth Activating Soothing Concentrate adds bifida ferment lysate, with strong anti-immunity suppression activity, to promote DNA repair and protect skin from UV damage; SK II Facial Treatment Essence uses Galactomyces Ferment Filtrate (commodity PITERA), mainly functioning as moisturizer and skin conditioner, with whitening, freckle removal and anti-oxidation effects; IOPE essence produced by Amore Pacific adds lactobacillus ferment lysates, with the culture derived from yogurt, main functions of moisturizing, skin conditioning and anti-oxidation, and the product mainly involves facial mask, facial cream, essence and eye cream.

波顿（上海）生物技术有限公司（简称“波顿上海”）是波顿集团在上海市浦东新区设立的一家专门从事前沿生物技术产品研发与制造的全资子公司，2018 年通过国家高新技术企业认定。我们充分利用基因工程、合成生物学、高通量测序技术，细胞生物学和分子生物学前沿技术等筛选来自植物、动物、微生物具有新功能、新活性的天然化合物，如抗坏血酸糖苷、天然糖脂及发酵胞溶产物等。同时研究这些化合物的在保湿、美白、抗皱、抗衰老等化妆品中的功效应用，构建化妆品原料功效体外评价平台。

Boton (Shanghai) Biotechnology Co., Ltd (“Boton Shanghai” for short) is a wholly-owned subsidiary of Boton Group in Pudong New District Shanghai, specialized in R&D and manufacturing of cutting-edge biotechnology products, and passed the national high-tech enterprise accreditation in 2018. We fully leverage cutting-edge technologies of genetic engineering, synthetic biology, high-throughput sequencing technology, cell biology and molecular biology to screen natural compounds with new function and activity from plants, animals and microorganisms, such as ascorbate glycoside, natural glycolipid and ferment lysate, while studying the efficacy application of these compounds in moisturizing, whitening, anti-wrinkle, anti-aging and other cosmetics, and building a cosmetic ingredient efficacy in vitro evaluation platform.

略谈未来哪些生物技术将影响香精香料行业

Brief Discussion on Which Biotechnologies Will Affect the Flavor and Fragrance Industry in the Future

文 / 波顿 (上海) 生物技术有限公司 张鹏
Author Zhang Peng, Bolton (Shanghai) Biotechnology Co., LTD



我们今天所处的时代是一个跨界竞争的时代，行业的颠覆者往往来自于行业之外，支付码逐渐取代了银行与信用卡、手机抢占了数码相机市场、微信取代了移动联通成为最重要的即时通讯工具、互联网造车势力取代汽车行业传统三大汽车巨头成为最有价值汽车公司。跨界竞争的本质是行业秩序、商业模式、技术核心以及盈利模式的跨行业的颠覆和重构，需要我们在脱离行业既有惯性思维和传统的羁绊下，以更宽阔的产业与技术视野来审视来自其他领域的技术创新，并深度融合继而催生新的行业业态。

In the current era of cross-border competition, industrial subverters often come from outside the industry, payment code gradually replaces bank and credit card, mobile phone grabs digital camera market, WeChat substitutes Mobile and Unicom as the most vital instant communication tool, and Internet car-making force replaces traditional big three auto giants as the most valuable auto company. Cross-border competition is essentially cross-industry subversion and reconstruction of industrial order, business model, technical core and profit model, requiring us to review technical innovation from other fields from a broader industrial and technical perspective, unrestrained by the established conventional thinking and tradition in the industry, and further generate new industrial business patterns through in-depth fusion.

生物技术领域是一个涵盖面非常广的领域，其包括了发酵工程、基因工程、细胞工程、酶工程、代谢工程、遗传学、生物信息学、结构生物学、计算生物学、系统生物学、微生物组学、定量生物学等许多具体的细分领域。在香精行业中，不少技术人员对于生物技术的了解与印象主要停留于发酵、酶催化和基因工程等局限的印象中。实际上生物技术是近二十年内发展速度最快的科技领域之一，许多日新月异的新生物技术已经与传统行业或社会生活领域深度融合，创立了新产业形式亦或是形成了新的产业动能。笔者学识浅陋、见识粗鄙，在此，以有限的所见所思，

浅述在笔者个人认为三项正在影响香精香料行业的生物技术，希望抛砖引玉，引发大家的思考。

Biotechnology is a very extensive field stretching across fermentation engineering, genetic engineering, cell engineering, enzyme engineering, metabolic engineering, genetics, bioinformatics, structural biology, computational biology, systems biology, microbiome, quantitative biology and plenty of other specific segments. In the flavor industry, many technicians' recognition and impression on biotechnology mainly stay in fermentation, enzyme catalysis and genetic engineering, etc. As a matter of fact, biotechnology is one of the fastest-growing scientific and technological fields in the past 20 years, and many ever-changing new biotechnologies have been deeply integrated with traditional industries or social life fields, creating new industrial forms or shaping new industrial momentums. With humble knowledge, inadequate insight, limited view and thought, the author hereby personally believes that three points are affecting biotechnology of the flavor and fragrance industry, hopefully to attract valuable contributions and inspire thinking.

1. 合成生物学与细胞工厂：正在改变香原料的来源方式

1. Synthetic biology and cell factory: changing the source of aromatic raw materials

天然香原料目前的获取方式主要为从香料植物中直接提取分离的，然而香料植物生长周期长、具有季节性、种植与采集成本较大、土地和人工投入高、而有效含量与丰度过低，同时受到特定气候和产地的影响。通过基因工程或者代谢工程的方式，我们可以将原本植物细胞中香气分子的合成途径在酵母、大肠杆菌等微生物细胞内构建，通过类似酿酒发酵的方式进行规模化的生产。这种生产方式被称为细胞工厂方式，与植物来源的方式相比，工厂化生产方式品质更加稳定，周期更短。然而，自然界中的酵母、大肠杆菌并不天生适合用于细胞工厂，其天然基因组中存在大量对产品生产无用的冗余基因及冗余功能，耗费了细胞工厂宝贵的资源及有限的空间，降低了细胞工厂的生产效率，因此需要对细胞工厂内的“生产线”及“内设”进行改造，以最大限度提高细胞工厂的生产效率。针对于细胞工厂的改造，合成生物学应运而生了。

At present, natural fragrant materials are mainly extracted and separated from fragrant plants. Nevertheless, fragrant plants feature long growth cycle, seasonality, high planting and collection cost, high land and manual input, low effective content and abundance, also affected by specific climate and place of origin. By means of genetic engineering or metabolic engineering, we can build synthetic way of aromatic molecule in original plant cell inside yeast, coliform bacteria and other microbial cells, and undertake large-scale production in the manner similar to brewing fermentation. This production method is known as cell factory method; factory-based production method enables more stable quality and shorter cycle than the plant-derived approach. However, yeast and coliform bacteria in the nature are not innately fit for cell factory, massive redundant genes and redundant functions useless for manufacturing products exist in their natural genome, wasting precious resources and limited space of cell factory, reducing production efficiency of cell factory, and therefore it is necessary to transform “production line” and “interior” of cell factory, and maximize the efficiency of cell factory. Synthetic biology rose to the occasion in response to the transformation of cell factory.

合成生物学是生物科学在二十一世纪刚刚出现的一个生物分支学科，其宗旨是将能够像设计和组装集成电路或者汽车一样，及设计并组装具有不同功能的细胞。从而可以快速人工设计与构建优化的，甚至是自然界中原本完全并不存在的人工细胞工厂。合成生物学中底盘细胞是构建细胞工厂的基础。“底盘”这个概念来自于汽车工业，汽车工业中不同的车型可以实现同平台生产，其不同的车型中可以使用相同的汽车底盘与标准化的通用配件这样能够降低汽车的生产制造成本和生产效率。在合成生物学领域，不同功能的细胞工厂也可以基于一个相同的包含细胞生



理生化维持最基础部分的底盘细胞进行设计与构建，在此基础上仅需要安装上不同的基因元件，即可形成不同功能的工程细胞。与传统的代谢工程不同，合成生物学中功能基因被设计成标准化、模块化的基因元件，其具有通配的基因接口。使得基因元件作为标准化的通用元件能够在不同的工程细胞中被使用，大幅提高了构建效率及降低了构建成本，也使得细胞工厂的设计可类似于汽车及手机等产品，采用标准化的元件进行快速标准化的设计与组装。

Synthetic biology is a biological branch of biological science that has just emerged in the 21st century, aiming at designing and assembling cells with different functions as designing and assembling integrated circuits or cars, thereby accelerating manual design and construction optimization, even for manual cell factory that originally does not exist in the nature. In synthetic biology, chassis cell lays the foundation for building cell factory. The concept of “chassis” stems from automobile industry. In automobile industry, different models can be produced on the same platform, and different models can use the same auto chassis and standardized universal parts, hence reducing the vehicle production cost and improving production efficiency. In synthetic biology field, cell factory can also be designed and built based on a same chassis cell that contains the most basic part of physiological and biochemical maintenance for the cell, and on this basis, different genetic components are only required to install, and thus forming engineering cell with different functions. In contrast to traditional metabolic engineering, functional genes in synthetic biology are designed as standardized modular genetic components with matched gene interfaces. Therefore, as standardized universal components, genetic components can be used in different engineering cells, considerably improving construction efficiency, reducing construction cost, also making cell factory design similar to such products as cars and mobile phones, and enabling rapid standardized design and assembly by using standardized components.

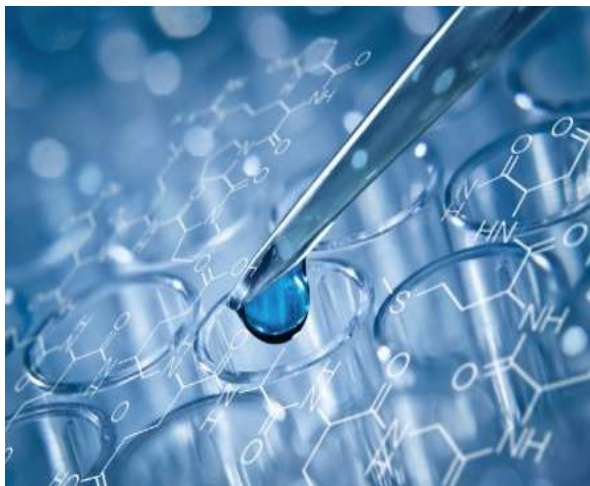
合成生物学对于香精香料的香原料领域的影响显现于单萜和倍半萜类的原料。萜类化合物的特征在于其菌采用共同的异戊二烯合成前体，这使得合成生物学的特点与优势获得发挥。不同的单萜和倍半萜的合成细胞工厂，可以采用完全相同底盘细胞，共用异戊二烯基或法尼基合成模块，仅仅是更换不同的单萜和倍半萜合成酶的基因元件就可以获得不同的生产不同萜类化合物的工程细胞。这意味着当我们完成一种萜类合成细胞的构建之后，完全可以在此基础上，通过更换不同的基因元件，很快构建出用于生产其他萜类分子的工程菌株。而在植物体内，萜类分子占了所有天然植物化学分子中涉及种类最多的，占据了已发现天然植物化学分子的40%。而萜类分子通常在植物细胞

中的丰度极低，不仅仅价格昂贵（如瓦伦西亚橘烯、圆柚酮、檀香烯、 α -新丁香三环烯、 β -石竹烯等），而且由于利用难度及开发成本过高，目前被产业化利用的萜类香气化合物仅占据了已发现的萜类化合物的非常小的部分。通过合成生物学手段，我们不仅能够大幅降低稀有萜类的生产成本，同时也能够将那些尚未被利用的萜类香气分子通过细胞工厂实现产业化制造。

The impact of synthetic biology on the field of flavors and fragrances is manifested in monoterpenes and sesquiterpenes. Terpenoids are characterized by the use of common synthetic precursor of isoprene in the bacteria, which gives full play to the characteristics and advantages of synthetic biology. Different synthetic cell factories of monoterpene and sesquiterpene can use exactly the same chassis cells, and share prenyl or farnesyl synthesis module, to simply change genetic components of different monoterpene and sesquiterpene synthase to obtain different engineering cells for producing different terpenoids, indicating that once we have built a synthetic terpene cell, we can quickly build engineering strains that can produce other terpene molecules by changing different genetic components. In plants, terpenoid molecules account for the most categories in all the natural phytochemical molecules, and accounts for 40% of the discovered natural phytochemical molecules. Terpenoid molecules are usually very low abundance in plant cells, not just expensive (e.g. naphthalene, nootkatone, santalene, α -neoclovene, β -caryophyllene, etc.), and due to excessively high utilization difficulty and development cost, terpenoid aroma compounds of industrialized utilization only occupies a very small part of the terpenoid compounds found. Through synthetic biology measures, we can not only significantly reduce production cost of rare terpenoid, but also achieve industrialized production of terpenoid aroma molecules not yet used by cell factories.

[相关应用在波顿]: 除了生产单一单体香气化合物以外，其实也可以同时将多个生香基因模块，参照产香植物细胞内的生香模式，在底盘细胞内构建仿生生香途径。烟草中有许多次生代谢的植物防御素，其含量直接与烟叶的成熟度及香气品质相关。上海波顿将相关基因合成元件在特定的底盘细胞中进行表达，构建了能够产生相关烟香化合物的工程菌株，其发酵抽提物可以直接用于弥补改善烟草香气。产品的主要有效成分为目前首次在真核细胞合成，产量远超烟叶细胞内源含量和现有公开的同类技术，为目前已知的最高水平。

[相关产品推荐]: PT336, PT318 发酵清甜香增效剂



[Relevant application in Boton]: Apart from the production of a single monomer aroma compound, in fact, it is also possible to concurrently build bionic aroma-producing pathways of multiple aroma-producing gene modules inside chassis cells with reference to the aroma-producing mode in the cells of aroma-producing plants. There are many secondary metabolized phytoalexins in tobacco, the content of which is directly associated with maturity and aroma quality of tobacco leaf. Shanghai Boton expressed relevant gene synthesis components in specific chassis cells, built engineering strains capable of producing relevant tobacco aroma compounds, of which fermentation extracts can be directly used to compensate and improve tobacco aroma. The main active ingredients of products are synthesized in eukaryotic cells for the first time at present, and the yield is far higher than internal content of tobacco leaf cells and currently disclosed similar technologies, at the highest level known at present.

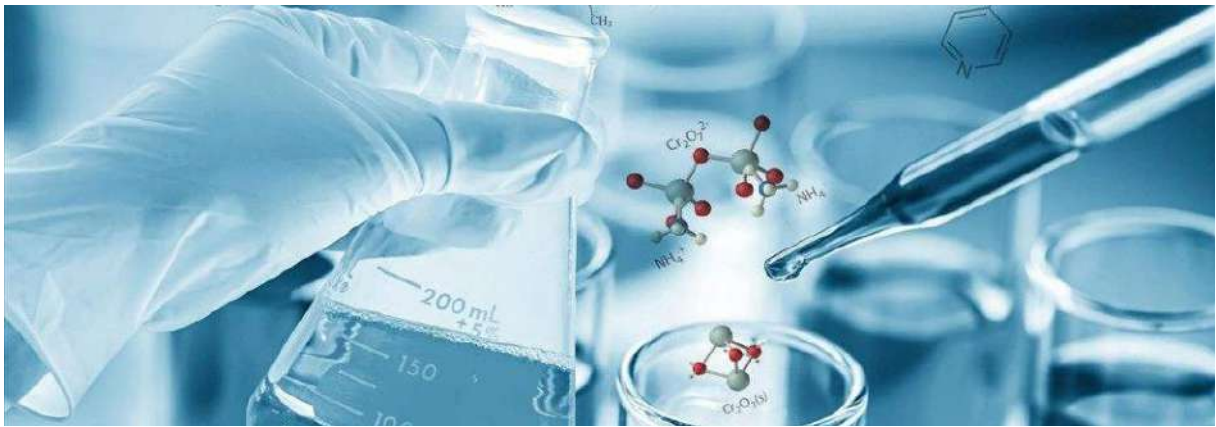
[Relevant product recommendation]: PT336, PT318 clear sweet and fragrant synergist of fermentation

2. 核酸测序与溯源技术: 正在影响香精配方的逆向解构

2. Nucleic acid sequencing and traceability technology: affecting reverse deconstruction of flavor formula

核酸溯源是指以 DNA 核酸信息为依据, 对生物样本的种类、亲缘、遗传谱系等信息进行溯源, 而核酸溯源的前提是完成对 DNA 的编码序列进行测序。基因的测序曾经是一件昂贵且费时的技术。在上世纪 90 年代第 1 代 Sanger 测序技术时, 人类基因组计划测定人类基因组的 31.6 亿个碱基对由 6 个国家科学家共同完成, 花费了 13 年时间, 耗资 30 亿美元。而到了 2003-2008 年, 以 illumina 公司的 Solexa/Hiseq 技术和 ABI 公司的 SOLID 技术为代表的二代测序技术的诞生, 使得人类基因组测试成本降低至 10 万美元以内。而 2016 年 2.5 代及 3 代测序技术诞生后, illumina 公司 NovaSeq 测序系统已经将人类基因组全基因组测序成本降低至 800 美元, 并仅需要 3-5 个工作日。而在 2020 年, 已经有 MGI、illumina 等多家公司宣布人类全基因组测序成本降低至 100 美元。除了在测序耗材成本大幅降低, 自动化测序仪的价格也变得非常平民化, 从最初的百万美金, 已经降低至几万人民币 1 台, 未来测序仪可以像打印机一样出现在更多生活场景中。测序价格及测序门槛的降低, 使得其在普通个人能够负担消费。今天即便是乡村及社区医院也有能力, 开展个人基因诊断及肿瘤筛查服务, 其已经形成了一个千亿级规模的个人医疗消费市场。

Nucleic acid traceability refers to the traceability of biological sample category, kinship, genetic pedigree and other information, based on DNA nucleic acid information, and the prerequisite of nucleic acid traceability is to complete DNA code sequencing. Gene sequencing used to be an expensive and time-consuming technology. For the first generation of Sanger sequencing technology in the 1990s, it took 13 years and USD 3 billion for the Human Genome Project to determine the 3.16 billion base pairs of human genome by scientists from six countries. In 2003-2008, the second generation of sequencing technology represented by Illumina's Solexa/Hiseq technology and ABI's SOLID technology emerged, cutting down the cost of human genome testing to less than USD 100,000. With the advent of Gen 2.5 and Gen 3 sequencing technology in 2016, Illumina's NovaSeq sequencing system brought down the cost of whole human genome sequencing to USD 800, and it took only 3-5 working days. In 2020, MGI, Illumina and several companies announced the cost of whole human genome sequencing declined to USD 100. Beyond significant reduction in the cost of sequencing consumables, the price of automatic sequencers also become quite affordable, from initial millions of US dollars to tens of thousands of RMB per unit, and in the future, sequencers will appear in more life scenes like printers. Sequencing price and threshold are lowered, allowing ordinary individuals to consume. Today, even rural and community hospitals are



able to conduct personal genetic diagnosis and cancer screening service, and a 100 billion-level personal medical consumption market has taken shape.

核酸测序及溯源技术今天已经非常廉价及便利，使得其可被应用于许多的传统工业或者生活领域中，在笔者看来这其中就包括了香精香料领域。配方是香精的技术核心与产品灵魂。配方的逆向分析过程中，行业内目前通常采用 GC-MS 或 LC-MS/MS 等成分分析手段，对香精配方中的化学组成比例及种类进行分析。然而香精或香基产品中，除了添加单体香料以外，通常也经常使用某一些植物提取物作为基料，由于植物提取物中所含有的组分非常的繁多复杂，从成分上很难去判断究竟是含有哪几种植物提取物以及几种植物提取物的使用比例，这类配方中天然植物提取物起到了一个配方加密的作用。然而，凡是植物提取物产品，植物细胞碎片中的核酸或核酸片段会残留于植物提取物中，通过对提取物中痕量的残留 DNA 片段样本进行扩增及测序溯源，可以很快确定样品中所含有的植物种类。不仅如此，今天 2 代高通量测序及 3 代单分子测序技术可对完成宏基因组或单分子实时测序，一次测序不仅能够提供总 DNA 内分别归属的种类，同时也能提供各 DNA 片段在总样本中的丰度，我们不仅可以了解样品中所含有若干种植物提取物的种类，同时也能依据 DNA 丰度获得不同植物提取物各自含量的参考比例。当然，即便是同一种植物，不同的品系及产地，其所制备的提取物的香气品质上依然有着一定的差距。然而，在化学组成与有效成分含量上这些提取物的差异并不明显，但从 DNA 的遗传信息上看，不同的产地、不同的品系乃至不同的个体植株，其遗传信息上均有其自身所特有的显著性标签。在建立 DNA 标签数据库的基础上或者已有参照的样本基础上，我们可以通过 DNA 溯源获知植物精油或者提取物的产地及品种。

Nucleic acid sequencing and traceability technology has been very cheap and convenient today, so as to apply in many traditional industrial or life fields, including the field of flavors and fragrances in the author's opinions. Formula is technical core and product soul of flavors. In the process of reverse analysis of formula, GC-MS or LC-MS/MS and other component analysis measures are generally adopted in the industry to analyze chemical composition proportion and type in the flavor formula. But in fragrance or flavor base products, apart from adding monomer fragrances, some plant extracts are also often used as base materials; due to very complex components contained in plant extracts, it is difficult to judge which plant extracts are contained, as well as the ratio of using several plant extracts, in terms of composition, and natural plant extracts in such formula play a role of formula encryption. However, for all the plant extract products, nucleic acids or nucleic acid fragments in plant cell debris will remain in plant extracts. Through amplification and sequencing traceability of residual DNA fragments in extracts, the type of plants contained in samples can be quickly determined. Moreover, today's second generation of high-throughput sequencing and third generation of single molecule sequencing technology can complete real-

time sequencing of macro genome or single molecule. In one-time sequencing, it can not only provide the respective types in total DNA, but also provide abundance of various DNA fragments in total sample, we can not only learn about the types of several kinds of plant extracts in the sample, but also obtain reference proportion of the contents for different plant extracts at the same time. Certainly, even if it is the same plant, there is still a certain gap in the aroma quality of the extracts prepared for different varieties and places of origin. However, the differences in chemical composition and active ingredient content of these extracts are not obvious, but from the perspective of DNA genetic information, for different places of origin, different varieties and even different individual plants, their genetic information has own unique significant labels. Based on the establishment of DNA label database or existing reference samples, we can acquire the places of origin and varieties of plant essential oils or extracts through DNA traceability.



当然，除了在配方分析中使用，核酸溯源技术同样可以再我们香精原料和产品的质量把控上被广泛应用。例如，蜂蜜掺假率较高的一类原料，通过蜂蜜中所携带的花粉 DNA 丰度及核酸溯源，则不仅能够了解蜂蜜的真实兑兑情况，也很快定位出蜂蜜的主要蜜源植物种类和蜜源地。再如，西洋参与人参、药用婆婆那和石蚕叶婆婆纳等相近植物提取物原料的鉴定与品控（DOI: 10.1155/2016/4352308）。另外，在核酸检测与溯源加热不燃烧烟及电子烟中的海关及法律管控中也有巨大作用。欧洲委员会 EP FP7 框架（613908 项目，DOI: 10.1155/2016/4352308）资助开发了基于烟草核酸 q-PCR 快速检测方法（原理同新冠病毒快速检测相同），只要样品中含有超过 0.24 ng 的烟叶或者 0.47 ng 的薄片（相当于 50 个烟草核酸分子），其能够被检测出为烟草制品。相比于通过尼古丁等特征化合物的色谱检测方法，核酸溯源检测的检出限更低、灵敏度更高、时间更快。

Undoubtedly, in addition to the use in formula analysis, nucleic acid traceability technology is also widely applied in quality control of our flavor raw materials and products. For example, regarding raw materials with a high rate of honey adulteration, through DNA abundance of pollen carried in honey and nucleic acid traceability, it not only helps acquire real mixing situation of honey, but also quickly locates main plant type and place of honey source. The identification and quality control of extracts from plants similar to American ginseng and ginseng, veronica officinalis and veronica chamaedrys (DOI: 10.1155/2016/4352308) is another example. Besides, it also plays a significant role in customs and legal control of nucleic acid detection, traceability, heating unburn cigarettes and e-cigarettes. European Commission EP FP7 Framework (Item 613908, DOI: 10.1155/2016/4352308) funded the development of q-PCR rapid testing method based on tobacco nucleic acid (in the same principle as rapid testing of

COVID-19). As long as more than 0.24 ng of tobacco leaf or 0.47 ng of thin slices (equivalent to 50 tobacco nucleic acid molecules) are included in the sample, it can be detected as tobacco product. Compared with chromatographic testing method through nicotine and other characteristic compounds, nucleic acid traceability testing boasts lower detection limit, higher sensitivity and faster time.

[相关应用在波顿]: 上海波顿在项目开发过程中曾经对进口的烟叶复烤剂进行分析研究, 从 LC-MS/MS 和 GC-MS 分析结果上看, 该烟叶复烤剂不含有任何明显的香气成分, 但却能够在打叶复烤过程中提高烟叶品质。通过对于样品中叶绿体 DNA (仅存在于植物中) 扩增与溯源后排除了含有某些植物提取物成分。进而通过对微生物组的核酸测序结果分析发现其中含有的超常规的几类菌剂。基于对该样品的分析与学习, 上海波顿开发了 BCH001-007 生物醇化剂产品。

[Relevant application in Boton]: Shanghai Boton once analyzed and studied the imported tobacco leaf redrying agent over the course of project. In view of LC-MS/MS and GC-MS analysis results, such tobacco redrying agent contains no obvious aroma component, but it can improve the quality of tobacco leaf during the threshing and redrying process. After amplification and traceability of chloroplast DNA (only in plants) in samples, some plant extract components are ruled out. Furthermore, through the analysis of nucleic acid sequencing results of microbiome, it is found several unconventional bacterial agents exist inside. Based on the analysis and study of this sample, Shanghai Boton developed the BCH001-007 biological alcoholizing product.

3. 先导化合物高通量筛选技术与 AI 辅助筛选技术: 正在创造新的气味与感官

3. High-throughput screening technology for lead compound and AI-assisted screening technology: new smell and sense under creation

先导化合物物的筛选已经是现代新药开发技术领域重要的技术环节。其中所涉及的筛选装备、筛选技术及筛选流程已经完全产业化与自动化。新药研发过程中需要耗费大量的时间、金钱从海量的备选化合物中筛选到具有药用活性的化合物。未来加快筛选效率节约筛选成本, 人们在长期寻找药物的实践过程中, 建立了大量用于新药筛选的各类药物筛选模型。从培养周期长, 成本最贵的动物个体水平的筛选、发展了组织器官水平的筛选模型, 从亚器官或精密的组织切片, 进一步发展出了细胞及亚细胞水平和分子和酶靶点水平上的药物筛选模型。

The screening of lead compound is a vital technical part of modern new drug development technology sector. The screening equipment, screening technology and screening process involved have been completely industrialized and automated. It takes plenty of time and money to screen out compounds with medicinal activity from massive alternative compounds in the process of new drug development. In the future, screening efficiency will be accelerated, with screening cost reduced. In the long-term practice of searching for drugs, a large number of various drug screening models for new drug screening have been established. Screening model at tissue and organ level is developed from the screening of animal individual level with long cultivation cycle and the highest cost, and drug screening model at cell and sub-cell level, molecular and enzyme target level is further developed from the sub-organ or precise tissue slice.

当药物筛选模型建立了细胞及分子水平的筛选模型时, 我们可以以微孔板或者微芯片形式作为实验工具载体, 以自动化操作系统执行实验过程, 以灵敏快速的检测仪器采集实验数据, 以计算机对实验获得的数据进行分析处理, 在同一时间内对成千上万的化合物以极小的成本进行快速筛选。其中, 基于靶点的高通量筛选 (High-Throughput Screening, HTS) 是目前使用范围最广, 最为成熟的筛选方式。以糖尿病治疗药物的筛选为例: 胰岛素能够促进血糖转化为糖原, 而胰高血糖素则将促进糖元转化为血糖, 这是人体调节血糖的重要方式。胰高血糖素样肽-1 (GLP)

是人体自身分泌的可以促进胰岛素分泌并抑制胰高血糖素条件信号肽，其作用机理是 GLP 类似于一把钥匙，可以插入细胞上的特异性受体 (GLP-1 受体，类似于锁孔)，当两者结合后就打开了激活胰岛细胞促胰岛素分泌的开关。如果一个新的化合物，能够类似 GLP 一样，打开 GLP-1 受体这把锁，那么这个化合物就又可以能够促进胰岛素的分泌。于是，科学家就 GLP-1 受体蛋白作为筛选模型，在微孔板上进行同时筛选，每个微孔中都加入了不同的候选化合物及 GLP-1 受体蛋白。如果钥匙和锁芯能够配对（两者结构上能够结合），则这个化合物就有潜力成为降血糖药物，会被作为先导化合物出用于后续的动物水平的药代和药理研究。在高通量筛选的模式下，同一时间有成千上万把类似的“钥匙”进行这样的试锁工作，大大提高了筛选药物的效率。

When screening model at cellular and molecular level is established for drug screening model, we can perform experimental process by automatic operation system, collect experimental data by sensitive and rapid testing instruments, analyze and process the data acquired from experiment by computer with microplate or microchip as experimental tool carrier, to rapidly screen thousands of compounds at the same time at minimal cost. Among them, high-throughput Screening (HTS) based on targets is the most widely used and mature screening method at present. Take the screening of drugs for treating diabetes as an example: insulin can promote the conversion of blood sugar to glycogen, while glucagon will promote the conversion of glycogen to blood sugar, which is an important way for human body to regulate blood sugar. Glucagon-like peptide 1 (GLP) is secreted by human body to promote insulin secretion and suppress glucagon condition as signal peptide. In respect of its action mechanism, GLP is similar to a key, to insert in specific receptors on cells (glp-1 receptor, similar to lock hole), and when both are combined, the switch of activating islet cells to promote insulin secretion is turned on. If a new compound can unlock GLP-1 receptor like GLP, this compound can boost insulin secretion. Therefore, scientists used GLP-1 receptor protein as the screening model, conducted simultaneous screening on microplates, and added different candidate compounds and GLP-1 receptor protein to each microplate. If the key and lock core are paired (both can be structurally combined), this compound has the potential to become hypoglycemic drug, used as lead compound for subsequent pharmacokinetic and pharmacological studies at the animal level. Under the high-throughput screening model, there are thousands of similar “keys” for such lock trial work, greatly improving the efficiency of drug screening.





那么，这样的技术在香精香料行业中具有什么作用呢？2018年9月，芬美意全现金收购了一家美国生物科技公司 Senomyx，Senomyx 是由斯坦福大学的生物化学家 Lubert Stryer 于 1999 年创立的，雇员人数仅约为 50 人，但其每年收入达到了 1600 万美元的小型科技公司。但是这家小公司，前后获得了百事可乐、卡夫、吉百利提供的研究资金及长期合作。Senomyx 的核心技术就是将药物筛选的技术，用于新的风味剂分子筛选上。人体在感知气味和味道时，其实是风味分子与舌头或者鼻腔中的受体结合（如甜味受体、苦味受体、鲜味受体等等），通过级联放大及神经信号传导至大脑，形成不同的风味的感知。与药物的基于靶点的筛选类似，Senomyx 最早开发了基于重组甜味受体的高通量筛选技术，筛选那些能够与甜味受体结合的备选风味分子，再从中筛选出新型的甜味剂，这项技术使得 Senomyx 能够在一两周内完成从几十万个待选分子的筛选出具有甜味先导化合物，完全颠覆了香精香料行业发现新风味分子的研究范式。现在 Senomyx 不仅仅用于甜味的高通量筛选技术，同时还具有苦味、鲜味、凉感等一系列感官的筛选模型技术。其目前专利已积累的新型甜味剂分子的种类与数量远远超过了人类在此之前所有发现的甜味分子的数量之和。

Then what is the role of such technology in the flavor and fragrance industry? In September 2018, Firmenich acquired an American biotechnology company Senomyx all by cash. Senomyx is a small technical company founded in 1999 by Lubert Stryer, a biochemist at Stanford University, with only about 50 employees, but annual revenue up to USD 16 million. However, this small company has received research funding successively from Pepsi-Cola, Kraft and Cadbury and established long-term partnership with them. The core technology of Senomyx is to apply drug screening technology in the screening of new flavor agent molecules. When human body senses smell and taste, the flavor molecules actually combine with receptors in the tongue or nose (e.g. sweet receptors, bitter receptors, umami receptors, etc.), and transmit to the brain through cascade amplification and nerve signal, to form different flavor perceptions. Similar to target-based screening of drugs, Senomyx was the earliest to develop high-throughput screening technology based on recombinant sweet receptors, screening alternative flavor molecules that can be combined with sweet receptors, and then screening out new sweeteners. This technology enables Senomyx to screen out sweet lead compounds from hundreds of thousands of candidate molecules within a week or two, completely subverting the research paradigm for discovering new flavor molecules in the flavor industry. Nowadays, Senomyx boasts not only high-throughput screening technology used for sweetness, but also a series of sensory screening model technologies of bitter taste, umami taste,

coolness and so forth. The type and quantity of cumulative new sweetener molecules patented has far surpassed the sum of all sweetness molecules previously discovered by mankind.

随着，筛选效率和筛选通量扩大，在新药研发过程中发现，筛选一个 Me too 或者 Me better 的药物变的越难越难，药物的专利分子范围越难越规避。这是由于高通筛选模式下，一个新药分子的各自衍生物与类似物在先导化合物阶段就已经被验证其功能功效，并将其中的具有潜力的化合物分子进行专利家族化保护。类似通量霸权在未来的某一天，我们在香精香料领域中也可能会看到，我们从植物中新分离鉴定的一个甜味分子，早已经存在人家的筛选分子库中了。当然，更值得注意的是，AI 技术也开始介入这个领域。我们进行高通量筛选时，目前依然需要采用受体蛋白与待测分子进行结合试验。AI 技术、计算生物学、结构生物学的发展，人工智能能够在虚拟计算机中模拟受体蛋白与待测分子的结合过程。如果可行，未来在无需试验的情况下，仅依靠计算机的模拟就可以在数秒钟内从上万个化合物中确定化合物的风味。这并非天然夜谈，而是当下正在发生事情。2020 年 12 月，Alphabet 旗下公司 DeepMind 公司开发的 AlphaFold 人工智能（打败围棋世界冠军的 Alphago 的兄弟）通过深度学习在国际蛋白质结构预测竞赛（CASP）上，以平均 GDT 得分达到 92.4，击败了其余的参会选手，其预测结果与药物实验模拟结果相差无几。



With the expansion of screening efficiency and screening throughput, during the R&D of new drugs, it is found that screening of a drug with Me too or Me better turns increasingly difficult, and the scope of patented molecules of drugs becomes increasingly difficult to evade. This is because under the HTS model, the respective derivatives and analogues of a new drug molecule have been proven for the functions and efficacies at the lead compound stage, and the potential compound molecules inside have undergone patent family protection. One day in the future, for such throughput dominance, we may also see in the field of flavors and fragrances that our sweet molecule newly identified and separated from plants will be already existed in someone else's screening molecule base. Surely, it is more noteworthy that AI technology is starting to intervene in this area as well. When we perform high-throughput screening, we still need to test by combining receptor protein with the molecule to be tested. With the development of AI technology, computational biology and structural biology, artificial intelligence can simulate the combining process of receptor protein and molecule to be tested in virtual computer. If it is feasible, in the future, computer simulation alone can determine the flavor of thousands of compounds in seconds without testing them. This is by no means ludicrous, but what is happening right now. In December 2020, AlphaFold AI (brother of Alphago that beat the go world champion) developed by Alphabet-affiliated DeepMind beat other players with an average GDT score of 92.4 in the International Protein Structure Prediction Competition (CASP) through deep learning, and the prediction results were almost the same as drug experiment simulation results.



千卷金丝七里香，层层薄脆万人尝。——题记

Thousands of rolls of golden threads spread its fragrance afar. Layers of thin crisp are loved by tens of thousands.

-Inscription

小时候的日子总是无忧无虑，夏日时光里，三五个小伙伴光着脚丫在河边抓螃蟹、泥鳅，战斗结束后，脸上、身上都是斑斑点点的淤泥，活脱脱像一个个花脸猫。回到家里妈妈已经摊起了煎饼，刚从鏊子出来煎饼香气不言而喻，沾满淤泥的小手还没洗净，就去抓金黄灿灿的煎饼，因为心急总免不得挨一顿训斥，但是只要吃了起来，刚才的训斥早已抛之脑后，真是怀念以前儿时吃煎饼的时光。作为一名地地道道的枣庄人，现在每次工作放假回老家，总要吃上一口煎饼，这也算骨子里一种印记。

As a child, I was always carefree. In summer, a few of my friends would catch crabs and loaches barefoot by the river. After the battle, our faces and bodies were covered with mud and looked like cats with painted faces. When I got home, my mother was making pancakes. When just out of the griddle, the pancakes smelled so nice. Before I could wash my muddy hands, I grabbed the golden pancakes, which always led to a reprimand because of my impatience. As long as I started on it, I just could forego all the scolding just happened. How I miss the pancakes in my childhood! As a true local to Zaozhuang, I would always get a pancake each time I go back home for holiday, which is sort of a mark in the bones.

留在记忆中的美食 - 煎饼篇

Food in memory-pancakes

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传统的煎饼是小麦经水充分泡开后，经石磨碾成糊状，摊烙在鏊子上加热成圆形而成，旧时多由粗粮制作，现多用细面和水调成面糊制作。烙成饼后水分少较干燥，形态似牛皮，可厚可薄，方便叠层，口感筋道，食后耐饥饿。食用煎饼需要较长时间的咀嚼，因而可生津健胃，促进食欲，促进面部神经运动，有益于保持视觉、听觉和嗅觉神经的健康，延缓衰老，实为绝佳保健食品。古代很多文人墨客都曾为煎饼的发展留下了感叹的诗句、辞赋。清代著名文学家蒲松龄的《煎饼赋》一词中写道“煎饼之制，何代斯兴？溲合料豆，磨如胶饧，扒须两歧之势，鏊为鼎足之形，掬瓦盆之一勺，经火烙而滂澎，乃随手而左旋，如磨上之蚁行，黄白忽变，斯须而成。”词中较为详细的描述了煎饼的制作过程。宋代李观有诗句：“蜗后没后几多年，夏伏冬愆任自然。只有人间闲妇女，一枚煎饼补天穿”。在我们看来诗中更是借助煎饼对鲁中平原地区母亲一辈妇女的勤劳、踏实和为家庭付出的赞誉。

Traditional pancakes are made by soaking wheat in water, grounding it into a paste by a stone mill, heated on a griddle into a round shape. In the old days, they were mostly made of coarse grain, which has been replaced with fine flour and water mixed into batter. After the pancakes are done, they contain less moisture and are dry. They look like cowhide, which can be either thick or thin. It is convenient to stack pancakes. They taste chewy and are hunger resistant. One must chew on pancakes for a while, which enhances body fluid secretion, invigorates the stomach, alleviates appetite, promote facial nerve movements. Therefore, they are beneficial to maintain the health of vision, hearing and olfactory nerves and delay aging, which is an excellent healthy food. Many ancient literati wrote lamenting poems for the development of pancakes. Famous literatus Pu Songling in the Qing Dynasty wrote in his poem Jianbing Fu, “Since when did people start to make pancakes in the first place? Soak the rice and beans together and grind them to a gelatinous jelly. Separate the rake to two sides and place the griddle in the shape of a tripod. Scoop a spoonful of slurry from the earthen basin and pour it on the griddle. After the hot ironing,





it makes a “pang pang” sound. Then, immediately hold the rake and rotate left, the slurry spreads like ants crawling on the griddle and turns into yellow and white. In a short moment, the pancake is ready. This poem described in more detail the pancake making process. The Song Dynasty literatus Li Guan wrote a poem: “A few years after the Goddess of Sky-patching was gone, summers and winters still took turns as always. Only women with spare time made pancakes for patching the sky.” From our point of view, the poem made use of pancakes to praise the diligence, steadfastness and devotion to family of mothers in the central Shandong plain.

现在煎饼已从农家餐桌逐渐走向城市的餐馆和星级酒店，煎饼的种类也出现了等多种演变。枣庄街头随处可见菜煎饼店铺和摊点，十几种菜品口味自由选择选择，简易灵活，已成为枣庄一道亮丽风景线。曾有人说，一座城市若没有小吃是件很令人遗憾的事，就像面容姣好的女子，清纯可人却双目失明一样。我想，被人们赞不绝口的煎饼和飘香街头的菜煎饼定会让身在他乡、吃着异乡饭的枣庄人情牵家乡、对故土充满惦念，也让来枣庄的外地人对枣庄这座城市更增添些许感性认识和依依不舍的留恋吧。

Nowadays, pancakes has gradually moved from peasant dining tables to urban restaurants and star-rated hotels. The types of pancakes have also evolved. Pancake shops and stalls can be seen on every streets of Zaozhuang. More than ten side dishes are available for free choice. Pancakes are simple and flexible and has become a beautiful scene in Zaozhuang. People once said that it is a pity for a city to have no snacks, like an innocent woman with a beautiful face but blind. In my opinion, the highly praised pancakes and the fragrant pancakes with side dishes in the street will definitely make Zaozhuang locals far away homesick. They will also add a touch of sensibility and emotional attachment to outsiders to Zaozhuang.



评《活着》：每个人都是洪流中的一滴水

Comment on To Live: Everyone Is A Drop in Mighty Stream

文 / 财务中心
By Financial Center.

《活着》之所以成为经典，一定有其作为优秀经典小说该有的品质。余华讲了一个苦难堆砌的悲剧故事，太过戏剧化而看似用力过猛，而实际上他是在讲一个成年人的寓言，他讲出了一个我们都能懂的人生道理，也传递给了我们最朴实有用的生存态度。

For the reason why To Live became classic, it must have essential qualities as an excellent classic novel. Yu Hua told a tragic story of stacked sufferings, excessively dramatic and seemingly strenuous, but he was actually telling a fable of adult, imparted a life truth that we can all understand, and also transmitted to us the plainest and useful attitude toward survival.

美国华盛顿邮报这样评论道：“《活着》是不失朴素粗粝的史诗，斗争和生存的故事，给人留下了不可磨灭的残忍与善良的形象。”《活着》里面很少有煽情的情节，每一个悲剧都如实的呈现在读者面前，读者是通过人物的行为举止和内心想法感受到悲剧之中的痛苦。每个人物的死都只是短短数语，有庆死的时候只是脑袋一歪摔在地上，凤霞死的时候只是说生下孩子后大出血，天黑前断了气，家珍就更描述的更简单了——凤霞死不到三个月，家珍也死了。这些重要的人物死时的描述在小说中都异常平白简单，像是在讲一件平常的事，这就是余华笔触中残忍的一面，他使每个读者都感受到了亲人死去般的无助和麻木，生老病死本就是人生的必然，没有必要渲染和煽情，但读来却显得异常沉重。

US Washington Post commented, “To Live is a plain and unpolished epic, and the story of struggle



and survival left an indelible image of cruelty and kindness.” There are few sensational plots in *To Live*, and every tragedy is presented truthfully in front of readers who feel the pain of tragedy through the behaviors and inner thoughts of characters. The death of each character is only a few words, You Qing died just head on the ground, Feng Xia died just saying hemorrhhea after giving birth to a child and breathed her last before dark, and the description of Jia Zhen is simpler—Jia Zhen also died less than three months after Feng Xia’s death. The deaths of these important characters are described unusually unadorned and simple in the novel, like telling a normal thing, which is the cruel side of Yu Hua’s writing, he makes every reader feel helpless and numbness like the death of relatives, as birth, old age, illness and death are inevitable in life, unnecessary to render and appeal to emotion, but it is read heavy-heartedly.

余华在《活着》的自序中写道：我决定写下一篇这样的小说，就是这篇《活着》，写人对苦难的承受能力，对世界的乐观态度。写作过程让我明白，人是为活着本身而活着的，而不是为了活着之外的任何事物所活着。正如他所说，小说的主人公福贵有着对苦难异于常人的承受能力和乐观态度，他的一生经历了自己的大起大落，经历的身边的人失而复得和最终一个个离他而去，当最终他世界上的亲人一个不剩的时候，他也变成了一位风烛残年的老人，他的生活再也不会会有亲人逝去的苦难了。他买了一头牛陪伴他，把它当成自己死去的亲人们，他的一生正如他唱到的那样——“少年去游荡，中年想掘藏，老年做和尚”。

Yu Hua wrote in the preface of *To Live*: I decided to write a novel like this, *To Live*, writing about people’s tolerance of hardship, optimistic attitude toward the world. From the writing process, I understand that human lives for the sake of living per se, rather than anything else. As he said, Fu Gui, the hero of novel, had abnormal endurance ability and optimistic attitude for hardship, he experienced dramatic ups and downs in the lifetime, and people around were lost and found, finally left him one by one. When no relative was left in the world in the end, he also became a frail old man, and his life would never suffer the pain of bereavement. He bought a cattle to accompany him, regarding it as his relatives passed away, and his life was just as he sang——“Wander in youth, want to dig treasure in middle age, and become a monk in old age”.

福贵的一生有许多的转折点，而对他最重要的转折点是在他年轻时嗜赌成瘾输光了全部家产，变得一贫如洗的时候，年轻时候的他是地主家的独子，家境富裕，他对活着的理解很简单，就使游戏人生，挥霍无度。可当他输掉了自己的全部家产时，他开始体验到了另一种生活，这种生活对于他原来的生活来讲，有着天壤之别，但他很快地适应了这种落差，对自己的现状有了正确的认识，他认识到了过去的错误，开始勤劳的学习种田，正如他说的那样：

“俗话说笨鸟先飞，我是笨鸟多飞。”他战胜了人生的第一个大挫折，这也为他此后的生活哲学奠定了坚定的基调，那就是无论遇到什么样的困境和挫折，都要好好地活着。

Fu Gui's life is imbued with numerous turning points, and the most important one for him is that at young age, he was addicted to gambling, lost all the properties, and became destitute. When he was young, he was the only son of landlord in a rich family. His comprehension of living was very simple, to play the game of life and spend lavishly. However, when he lost all his properties, he began to experience another kind of life, this life and his original life were poles apart, but he quickly adapted to this gap, and had a correct recognition on his status quo; he realized previous mistakes, and started to learn farming diligently, as he said, "As the saying goes, clumsy birds have to start flying early. I'm a clumsy bird and must fly more." He overcame the first huge setback, laying a solid cornerstone for his philosophy of life from then on, to live well no matter what predicament and setback in store for him.

从地主少爷到贫苦百姓的转变，使得福贵真正的从幼稚转变为成熟，他肩负起了家庭的责任，这场变故给他带来了最宝贵的人生财富，此后的生活即便贫苦艰辛，他懂得了为了身边的人坚强的生活下去，才是最重要的。

The transition from a son of landlord to poor ordinary man enabled Fu Gui to truly change from childish to mature, and he shouldered the family responsibility. This mishap brought him the most precious wealth in life. Even though he lived in poverty and hardship afterwards, he understood that it was the most important to live a strong life for the people around.

在福贵回到家乡土地上随后的日子里，他经历了这个国家那段岁月里经历过的一切，土地改革，人民公社运动，大跃进，文革。一个个龙二，春生，队长这样的人被裹挟在时代里，命运身不由己，唯独福贵顺从地活着，他像是被驯服了一样从不反抗从不埋怨，他珍惜活着的时光，珍惜与家人在一起的时光，即便穷苦，活着的意志，是福贵身上唯一不能被剥夺的东西。可是，就像是命运安排好的似的，有庆，凤霞，家珍，二喜和苦根相继离去，他像是收尸人一样一个个埋葬了他们，如果说世界上最痛苦的事是与至亲之人生死相别，那么这样的痛苦福贵已经历了五次。命运安排他一个人活着，却又让他忍受痛苦和孤独，这样的活着使他学会了坦然地走下去，他与一只同样年迈的老牛一并活着，这时他已经无牵无挂，他的心境正如他在耕田时喊出的歌谣——皇帝招我做女婿，路远迢迢我不去。

In the days after Fu Gui's return to the hometown, he experienced everything that the country had gone through during that period: Land Reform, People's Commune Movement, Great Leap Forward and Cultural Revolution. Such people as Long Er, Chun Sheng and Team Leader was swept away by the era one after another, losing control of fate, but Fu Gui was the only one to live obediently, he never resisted or complain like being tamed, he cherished the living time, cherished the time staying with family, and despite poverty, the will of living was the only thing not to be deprived from Fu Gui's body. Nevertheless, the fate seemed as arranged, You Qing, Feng Xia, Jia Zhen, Er Xi and Ku Gen left successively, and he buried them one by one like a corpse collector. If life and death of close relatives is the world's most painful, Fu Gui experienced this pain five times. Fate arranged him to live alone, but let him endure pain and loneliness. Thanks to such living, he learned to move on undauntedly, and lived with an old cattle together, untied at this time, in a mood as he shouted while plowing—the emperor invited me to be a son-in-law, far away and I'll not go.

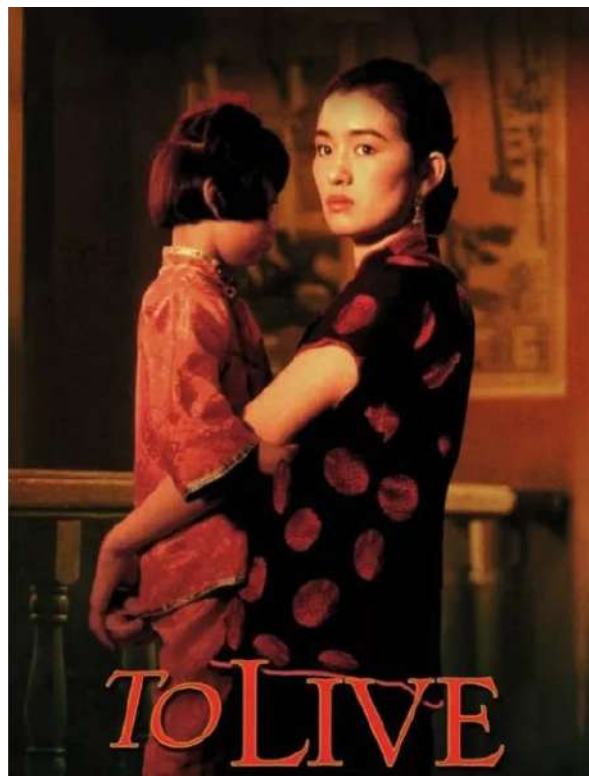
当一个人经历活着的种种磨难之后，他还能乐观的活下去，那么他就是一名不平凡英雄，这使得他可以背负起接踵而至的打击，拥有着对抗挫折的勇气。毫无疑问，福贵就是这样的一个人。余华把种种磨难堆砌在了一个人的身上，使得小说更戏剧化，但又将故事埋在时代的种种变迁中，让人觉得又很真实，就是这种戏剧化和真实感，使得读者在读福贵的悲剧的时候既不觉得是过分旁观的戏外人，又能同时保持一颗怜悯和同情之心，深入其中与主

角同甘共苦，好运捶顾他时，我们会欣然微笑，当他遭遇厄运时，我们会黯然落泪，悲剧接踵而至，我们和福贵一样无法喘息。当苦难终于过去，福贵依然乐观的活着，我们也被感染了这股积极的力量，从而学会更从容的去面对现实生活中的挫折。

If a person can still live optimistically after experiencing various trials and tribulations of living, then he is an extraordinary hero, allowing him to bear successive attacks, with the courage to fight against setbacks. Undoubtedly, Fu Gui is such a person. Yu Hua stacked up various trials and tribulations on a person, to make the novel more dramatic, but buried the story in the vicissitudes of era, rendering a real feeling. Due to this kind of dramatic and realistic sense, readers will not feel too much like bystanders when reading Fu Gui's tragedy, while keeping the heart of mercy and compassion, to dive in it and share weal and woe with the leading character. When good fortune knocks him, we smile; when bad fortune knocks him, we weep; when tragedy is mounting, we cannot breathe like Fu Gui. When the sufferings finally passed, Fu Gui was still living optimistically. We are also infected by this positive power, thus learning to face setbacks in real life more calmly.

小说的结尾老人的故事讲完了，他和牛渐渐远去，炊烟在田野的乡村里袅袅升起，黄昏转瞬即逝，象征着福贵老人短暂而又曲折的一生即将走到尽头，可我们不必感到悲伤，每个人短暂的一生中总会有许多苦难，但这些苦难终会过去，珍惜当下，好好地活着就是最重要的事，

In the end of novel, the old man's story is finished, he and the cattle fade away, and chimney smoke rises gently from the village field. Dusk is transient, symbolizing old man Fu Gui's short lifespan of twists and turns will come to an end soon, but we may not feel sad. Everyone always encounters many sufferings in the short life, but they will eventually pass, and what is the most important is to cherish the present and live well.





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