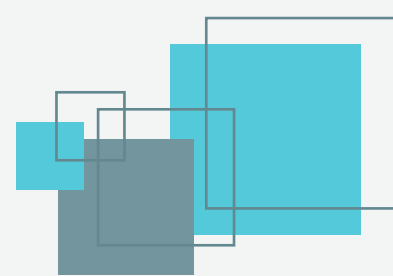


# MEDTECH STARTUP

## KERALA RANKS 1ST IN STARTUP ECOSYSTEM-BY LIN MEDTECH: A SHINING STAR IN KERALA'S THRIVING STARTUP ECOSYSTEM



### Dr. Lini Basil

Founder & CEO at  
ByLin MedTech Private Limited

I had a wonderful professional life for around 11 years as a dentist. Being a dentist was an honorable, satisfactory and a noble matter in my life. My career took a turn in 2017, when I had a weakness of my right arm and I found out that it was indeed an occupational hazard which usually dentists face. I had to stop practicing dentistry owing to the weakness. At that point of life, either I could live as a “Retired hurt” dentist- house wife or I could use my skills to be of use for society in any other way. I selected the second option and joined “Social Innovation Immersion program” - SIIP Fellowship of BIRAC, DBT in 2018 at TIMed- the business incubator of Sree Chitra Thirunal Institute of Medical Science and Technology, which is an institute of national importance. The fellowship was meant to create innovative medical devices for elderly health and solve unmet needs of aged population. The intent of the program was to create entrepreneurs in India as a part of Make in India program. Through this program I travelled all over Kerala, met aged people among tribal communities, old age homes, hospitals, care homes and studied the medical needs. We took inputs from Social Security Council, Dept. of Social Justice, Kerala and found out details of aged community that needs help. I was able to submit 10 unmet medical needs to the DBT and the expert committee which included members from TISS Mumbai, BIRAC, IIT B, IIT D,

IIT M selected a particular medical need ‘Dry Mouth in aged people’ which I was passionate to solve. This was the turning point of my entire professional life.

Xerostomia/Dry Mouth is a condition in which the salivary glands doesn't function/ degrade and as a result of this, people experience severe dryness, burning sensation, bad breath, speech difficulties, multiple infections, swallowing difficulties. The major reasons for this condition are radiotherapy and chemotherapy for different cancers especially Head and Neck Cancers, Auto immune diseases like Sjogren's syndrome, Scleroderma, SLE, Severe diabetes mellitus, elderly who take a lot of medications.

Covid also caused permanent dry mouth in a lot of people. Around 253 Million people in India are affected due to this condition. All the treatment options available are not affordable or not giving the adequate moisturisation that the patients need. Meeting with dry mouth patients was an eye opener for me as a doctor. The patients we treated with the present solutions were not satisfied with the treatment which they never revealed to the doctors and even if they complained doctors couldn't prescribe a better solution. We identified this opportunity and the need and decided to work on it.

I met Dr. Senthilkumar M, a Ramalingaswami fellow of DBT in SCTIMST in 2019. Dr. Senthil understood the medical need and he had the knowledge about the biomaterials which could provide moisturisation to oral cavity. I collaborated with Dr. Senthil and we made a Hydrating patch which can be kept inside the mouth, glued on to cheek using a biocompatible material. This patch absorbs water taken by the patient and releases moisture slowly giving continuous moisturisation to mouth. The patch can be thrown away as a biodegradable waste at the end of the day. We were successful in creating a patch which doesn't have any artificial chemicals or sugars, a patch with unique combination of biomaterials and which is of affordable cost. We found out that our patch has the ability to inhibit harmful microbial infections that are very common in dry mouth patients due to the presence of the biomaterials in it. We interacted with a lot of patients who had dry mouth. We took inputs from our end users to create the design and to make the patch more user-compatible. We are the first movers in this area globally because there is no hydrating patch for dry mouth condition in the whole world.

After making a working prototype, the way forward for me was crystal clear. I knew that I wanted to create a company. I wanted to make more medical devices which will be beneficial for people of my country. Bylin Medtech Pvt. Ltd. was thus born on 18-11-2020 as a result of this self-realization. A team was needed. Dr. Senthil and myself had very clear alignment about the way forward as a startup and Mrs. Asha V Nath joined as the first project associate. We raised funds of Rs 1.5 Crore through BIRAC BIG grant, BIRAC SBIRI grant, KSUM Productization grant & KSIDC seed funding.

In 2021 we got our Indian patent granted and in 2022 our USA patent was filed. This was a big milestone for the company. Today we are an ISO 13485:2016 certified company which has an established quality management system.

We proved that Hydrating patch which we named as Drizlin oral patches were safe, biocompatible, eco-friendly, and inhibited the microbial infections. As a novel medical

device we had to get the regulatory approvals from DCGI and we could prove to DCGI that this is a simple Class A medical device which is very safe to patients. We are in collaboration with eminent national institutes like Tata Memorial Hospital, Mumbai and Nairs dental College, Mumbai for conducting clinical trials in 100 subjects as advised by the Hon. DCGI.

The Government of Kerala has framed and adopted a progressive new Industrial Policy on 1st April 2023. Recognizing the immense potential of the MedTech sector, the Government of Kerala has introduced a series of incentives and initiatives to attract investments and foster growth in this domain. In line with Kerala's transition to a high-value, knowledge economy, Emerging Technology sectors like Artificial Intelligence (AI), Electric Vehicles (EVs) have identified as thrust sectors. Medical Technology, Medical Devices & Equipment, Biotechnology and Life-sciences as well as high-value rubber technology products are also priority sunrise sectors. A policy approach that is cognizant of the need for the preservation of rich natural resources and the vibrant community in Kerala, the new policy aims to establish sustainable businesses and industries in a strong Environment-Social-Governance (ESG) context.



Recognizing the potential of the medical devices industry, the Kerala Industrial Policy 2023 puts significant focus on promoting innovation, research, and development in this sector. The policy aims to establish medical device parks and innovation centers to support the manufacturing of high-quality and affordable medical devices. It encourages collaboration between industry and research institutions, fostering translational research and technology transfer. Additionally, the policy provides incentives such as tax.

We are a 6 member team with me and Dr. Alexander K A as directors, Dr. Senthil as Chief scientific advisor, Shahana N as project Associate, Dr. Aiswarya Anil as QA/QC manager, Ashby Rajan as Project manager. We are mentored by C Balagopal IAS (Business), Dr. Balagopal Nair (Clinical trials mentor) and Mr. Roy Varghese (Finance).

As the woman founder of a biotech company which is doing a commendable project to solve a major disease, I was selected as one among

the 75 women founders all over India and was felicitated by Hon. Prime minister of India in the 10th anniversary of BIRAC in New Delhi. I represented TiE Kerala for the Global women pitchfest as finalist in the global competition. Bylin Medtech came in the second position in startup pitching competition at Bio connect, conducted at Kovalam in May 2023. I was selected as Best woman entrepreneur by MG University in 2022. Drizlin Oral patches was selected as one of the best innovations at OHIC, conducted in AIIMS, New Delhi.

