

Paper ID	1570759542
Title	Bioforge PTL: An IoT Enabled Rapidly Deployable Phototherapy Device for Neonatal Jaundice
Author	Shovon Sudan Saha, Hasib Chowdhury, Rahat Shihab, Fatin Ahammed and Abdulla Bhuiyan (Bioforge Health Systems Limited, Bangladesh)
Email	shovonsaha3401@gmail.com

---

### Abstract

Phototherapy is one of the conventional methods used to treat neonatal jaundice. However, the devices are not only expensive, they are also arduous and time-consuming to procure. Bioforge PTL device provides a rapidly deployable solution for providing affordable phototherapy in low-to-middle income countries (LMICs). The acrylic-based modular design can be developed easily with commonly available laser cutting technology. Besides that, its user interface (UI); with just a switch and knob, enables smooth transitioning between the three levels of intensity. With a large swappable 25.6Ah battery pack, the system is capable of operating at 6 to 34 hours depending on intensity. The battery backup and charging capability through renewable resources make the proposed system suitable to be deployed at regions with non-consistent electricity and even at disaster-stricken areas. Nevertheless, the internet-of-things (IoT) capabilities of the system enables remote monitoring through Thingsboard. Finally, healthcare professionals can access this information using web servers to make informed decisions based on the device conditions.