

# A Non-invasive, Advanced Microclimate Sensing, Optimized Bird Nest Monitoring System

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## Technology Readiness Level (TRL)

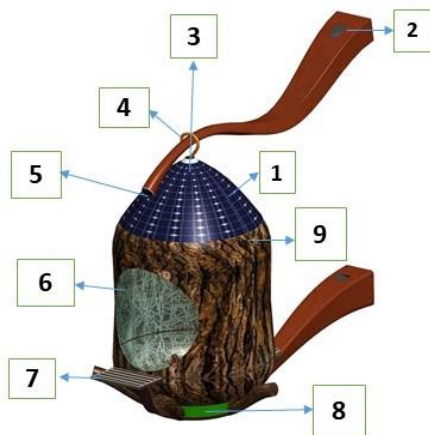
TRL 5 : Simulated environment validation

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**Keywords:** Machine Learning, IoT, Nestwatch, Nesting Progression, Non-invasive design



- 1 – Perovskite Solar Cell
- 2 – Wooden Hanger
- 3 – Inside Camera
- 4 – Hook
- 5 – Camera
- 6 – Nest
- 7 – Stand
- 8 – Battery With Controller
- 9 – Temperature and Humidity Controller

**Innovative Non-Invasive System:** Designed for efficient, long-term monitoring of bird populations, the system supports conservation by providing high-quality data on nesting habits without disturbing the birds.

**High-Precision Data Collection:** Real-time sensors capture detailed microclimate conditions within nests, improving the understanding of habitat impacts and aiding conservation strategies.

**Predictive Modelling:** Uses machine learning algorithms to adjust and optimize nest microclimate conditions, ensuring a supportive environment for birds.

**Long-Term Data Insights:** Stores and analyzes historical microclimate data, offering valuable information for research and aiding bird population conservation efforts.