

Dr. V. D. Shivling

Chief Scientist & Former Head, Agrionics Division — CSIR-Central Scientific Instruments Organisation

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PROFESSIONAL SUMMARY

R&D leader with 32+ years at CSIR-CSIO advancing sensors, embedded instrumentation, and IoT systems for pre- and post-harvest agriculture (Agrionics). Directed a Rs. 25+ crore portfolio of 34 projects; delivered 8 technologies as PI/Nodal Officer and drove 7 industry technology transfers realizing Rs. 36.25 lakh in licensing revenue. Headed the Agrionics Division for 6.5 years; Honorary Professor (AcSIR) with 12 journal publications, 2 patents filed, and 65+ researchers mentored.

CORE COMPETENCIES

Sensor Design & Instrumentation • Embedded Systems & Microcontroller Interfacing • IoT & Agriculture 4.0 • Microwave/Patch Antenna Design • Machine Learning (ANN) Modeling • Precision Agriculture • Technology Transfer & Commercialization • R&D Program & Budget Management • Prototyping & Field Validation • Team Leadership

PROFESSIONAL EXPERIENCE

CSIR-Central Scientific Instruments Organisation (CSIR-CSIO), Chandigarh

Oct 1993 – Present

Chief Scientist, IMCS Division (Oct 2020 – Present); progressive promotions: Scientist B → C → E1 → Principal → Sr. Principal Scientist

- Direct research on agri-electronics instrumentation across a portfolio of 6 externally funded projects (~Rs. 2 crore), 8 CSIR mission projects (~Rs. 15 crore), and 20 divisional projects (~Rs. 8.2 crore).
- As Nodal Officer, CSIR Agri-Nutri-Biotech (ANB) Mission, coordinated a ~Rs. 7.6 crore multi-project program — indigenized lyophilizer for fruit/vegetable preservation (Rs. 3.98 Cr, Co-PI), IoT-enabled Agriculture 4.0 (SAGITA), mobile soil-sensing system, flow hive for wax-free honey, and bamboo composite structures — owning budgets, reviews, and reporting.
- Expert Member, PRSG committee, MeitY (Govt. of India); contributed to CSIR-CSIO 12th Five Year Plan formulation.

Head of Department, Agrionics Division

Jan 2015 – Jun 2021

- Led the division's full R&D lifecycle — ideation, prototyping, field trials, commercialization — delivering 7 technology transfers (electrostatic sprayers, disinfection machines, dust/smog-control device, grain moisture analyser, water-contaminant sensor system) to licensees across 5 states, generating Rs. 36.25 lakh in fees; negotiated ToT agreements and post-transfer handholding.
- Chaired 8+ institutional committees (Security, Disaster Management, Energy, Grievances, House Allotment); SC/ST/PWD Liaison Officer; Member, Scientist Screening Committee and ACR Collegium.

KEY PROJECTS (PRINCIPAL INVESTIGATOR)

- **Early Warning System for Plant Protection & Pest Control** (CSIR SUPRA, Rs. 3.14 Cr): Built ANN-based disease-forecasting system integrating temperature, humidity, PAR, and wind sensors; field-deployed with agriculture-university partners; published predictive model for powdery mildew in *Picrorhiza kurroa*.
- **Sensors & Instrumentation for Crop Growth/Photosynthesis** (CSIR SUPRA, Rs. 64.7 L): Developed leaf-chamber prototype with CO₂, temperature, and humidity sensing and analysis software.
- **Handheld Moisture Meter for Made Tea** (DST, Rs. 28.78 L): Designed patch-antenna sensor, embedded hardware/software, and lab prototype for rapid, non-destructive moisture measurement.
- **Digital Moisture Probe for Oilseeds & Pulses** (Govt. of India, Rs. 12.13 L): Engineered resistivity-based microcontroller probe; validated in commercial oil-mill operations.

RESEARCH OUTPUT & MENTORSHIP

- **Publications:** 12 peer-reviewed journal articles (Springer, AIP, Taylor & Francis; IF up to 2.7) and 10+ conference papers spanning microwave-absorption nanomaterials, sensor systems, and ML-based crop-disease prediction; **2 Indian patents filed** (prosthetic-hand mechanisms); ~100 technology reports; 5 invited talks.
- **Mentorship:** Supervising 3 PhD scholars (AcSIR); supervised 25+ M.Tech. theses and trained 40+ UG students; organized 10 national conferences/workshops/symposia.

EDUCATION

PhD, Engineering — Jaipur National University; sensors & instrumentation for plant protection

2017

M.Tech., Electronics & Communication Engineering — Punjab Technical University

2007

B.E., Electronics — Walchand College of Engineering, Sangli (Shivaji University)

1992

PROFESSIONAL AFFILIATIONS

Fellow, IETE • Life Member, Instrument Society of India • Member, Indian Phytopathological Society • Member, Indian Meteorological Society