

1. Name **Dr. V. Saharan**
2. Designation and Present Institute **Assistant Professor & incharge, Plant Tissue Culture lab., Deptt. of Molecular Biology & Biotechnology**
3. Postal address for Communication **Dr. V. Saharan
Assistant Professor & Incharge, Plant Tissue Culture lab., Department of Molecular Biology & Biotechnology, Maharana Pratap University of Agriculture and Technology, Udaipur-313001**
4. Telephone, Fax **09461180586, 0294-2420447**
5. E-mail **vinodsaharan@gmail.com**
6. **Brief account of your research interests with special focus on Nano Science and Technology (strictly within 300 words):**

The development of nano-structures as smart delivery systems to target agrochemicals (herbicides, insecticides, fungicides, macro-micronutrients and plant growth regulators) at specific sites in plant system would be a prime target for agriculture in present day scenario. Encapsulation of agrochemicals into nanostructures can improve better penetration through plant membranes, and allowing slow and constant release of the active substances. The physico-chemical characteristics of saponins indicate its suitability for delivery of biological active compound in biological system. Saponins assemble in micelle structures in aqueous environment and in this fashion, saponin molecules could play a vital role in delivering agrochemicals in a targeted manner in crop plants. Ultrasonication has been demonstrated as an effective method for generating various self-assembled structures of saponins and encapsulation of Plant growth regulators into these structures in our recent studies and effectively delivered the growth regulators into plant cells. We anticipate that plant growth regulators, pesticides, herbicides, fungicides, nutrients are some of the candidates delivered with saponin nanostructures. Our research interests are mainly on developing cheap and target specific delivery systems for agrochemical adapting Nano-biotechnological tools.

7. **Keywords related to your research interests (maximum 10)**
Agrochemicals, biological membranes, delivery system, nano-biotechnology, saponin nanostructures, ultrasonication