

EVENT REPORT: HANDS-ON WORKSHOP ON INKSCAPE



DECEMBER 3, 2025
SANRAKSHAN SOCIETY
DEPARTMENT OF SUSTAINABLE ENERGY ENGINEERING, IIT KANPUR

1. Executive Summary

The Sanrakshan Society, Department of Sustainable Energy Engineering (SEE), successfully organized a hands-on technical workshop titled "3-Hour Hands-on Workshop on Inkscape" on December 3, 2025. The event was designed to equip the research community at IIT Kanpur with advanced skills in creating high-quality, scalable vector graphics for scientific publications. The workshop attracted 102 participants (74 offline, 28 online) from various academic levels, with a significant majority being PhD scholars. The session was led by Prof. Vivek Verma, an expert in scientific illustration, covering topics from basic vector theory to advanced 3D-like rendering.

2. Event Overview

2.1 Background and Rationale

In the domain of scientific research, the ability to produce high-resolution, publication-ready figures is a critical skill. Traditional raster-based tools (like MS Paint or basic image editors) often result in pixelated images that fail to meet the rigorous standards of top-tier journals. To address this gap, the Sanrakshan Society organized this workshop to introduce Inkscape, a powerful open-source vector graphics editor that serves as a professional, cost-free alternative to proprietary software like Adobe Illustrator.

2.2 Workshop Objectives

The primary objectives of the workshop were to:

- **Enhance Research Communication:** Train scholars to design crisp, scalable graphical abstracts and technical diagrams.
- **Build Technical Competency:** Teach the use of Bézier curves, nodes, and boolean operations for engineering schematics.
- **Promote Open-Source Tools:** Encourage the adoption of free, high-performance software for academic work.
- **Visualize Complex Data:** Enable researchers to create 2D and 3D-like illustrations that accurately represent scientific concepts.

2.3 Resource Person

Prof. Vivek Verma

Assistant Professor, Department of Sustainable Energy Engineering (SEE), IIT Kanpur

- **Expertise:** Prof. Verma brings over eight years of experience in graphic design (Inkscape, Affinity Designer, Blender). He independently designs all illustrations for his research, with one of his works featured as a journal inside back cover in *Advanced Sustainable Systems*.
- **Research Area:** Recycling and recovery of critical metals from electronic waste.

2.4 Event Details

- **Date:** December 3, 2025 (Wednesday)
- **Time:** 10:00 AM – 1:30 PM (3.5 Hours)
- **Venue:** Room 206H, Diamond Jubilee Complex, IIT Kanpur

- Registration Deadline: November 30, 2025

3. Curriculum and Structure

The workshop was structured into two intensive technical sessions, ensuring a progression from fundamental concepts to advanced application.

3.1 Session Breakdown

Session	Time	Topics Covered
Session 1	10:00 AM – 11:30 AM	- Vector vs. Scalar: Understanding resolution independence. - Basics of Drawing: Creating shapes, managing stroke & fill. - Boolean Operations: Union, difference, and intersection of paths.
Break	11:30 AM – 11:45 AM	<i>Tea Break (15 Minutes)</i>
Session 2	11:45 AM – 1:30 PM	- Bézier Tool: Mastering custom curves for tracing and diagramming. - Node Editing: Fine-tuning shapes at the vertex level. - Visual Depth: Lighting and shading for 3D-like effects. - Color Theory: Using HTML hex codes for scientific accuracy.

Table 1: Detailed schedule of the workshop curriculum.

4. Participation Analysis

The workshop witnessed a robust response from the campus community, reflecting a strong demand for technical skill-building events.

4.1 Attendance Statistics

- Total Participants: 102
- Offline Attendees: 74
- Online Attendees: 28

The following 74 participants attended the workshop in-person at Room 206H, Diamond Jubilee Complex, IIT Kanpur on December 3, 2025:

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4.2 Demographic Breakdown (Offline)

The offline cohort was predominantly composed of postgraduate researchers, aligning with the workshop's focus on thesis and publication support.

Breakdown of offline workshop participants by academic program, highlighting the strong engagement from the research community

- PhD Scholars: 53 (71.6%) – The largest group, indicating high relevance for doctoral research.
- M.Tech / MSR: 11 (14.9%)
- Undergraduate (B.Tech / BS): 4 (5.4%)
- Others (Faculty/Staff): 6 (8.1%)

4.3 Departmental Diversity

While hosted by the Department of Sustainable Energy Engineering (SEE), the event drew participation from multiple disciplines, including:

- Electrical Engineering
- Materials Science
- Civil Engineering
- Physics
- Chemistry

5. Key Outcomes and Impact

The workshop successfully achieved its goals, delivering tangible benefits to all 102 participants. Over three intensive hours, students acquired practical expertise in creating high-quality scientific illustrations using Inkscape's advanced vector tools. Participants learned to design various technical illustrations, including schematics, geometric diagrams, and engineering drawings that can be directly used for research publications, theses, and academic posters.

The training enabled attendees to produce crisp, scalable, publication-ready figures that meet the rigorous standards of top-tier journals. By mastering Inkscape, participants now have access to a cost-effective, open-source alternative to expensive proprietary software like Adobe Illustrator, significantly reducing research-related expenses without compromising on quality.

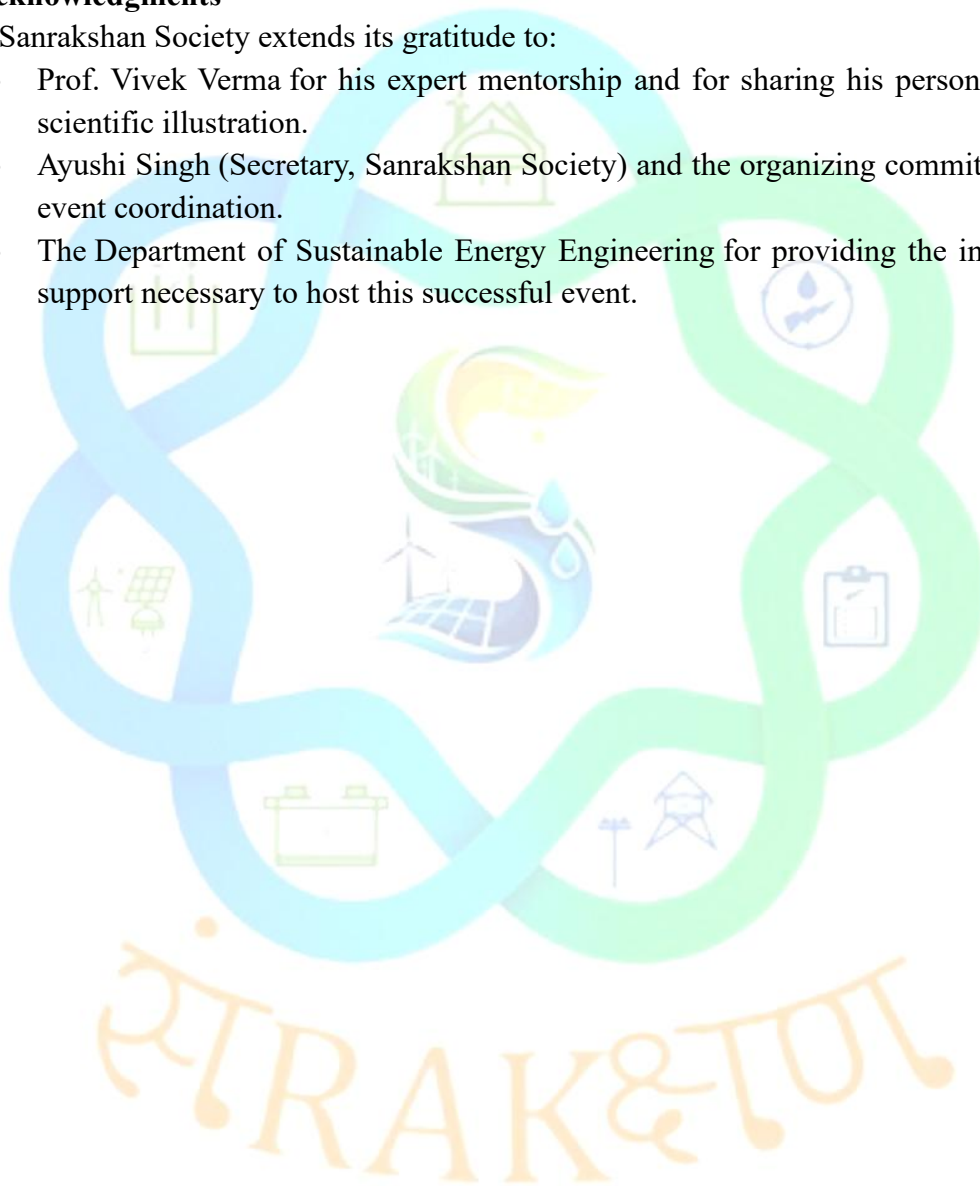
Prof. Vivek Verma's clear and engaging teaching methodology ensured that every student's queries were addressed during the session. Additionally, participants were introduced to complementary visualization tools such as Blender, VESTA, and Obsidian, providing them with a comprehensive

toolkit for scientific visualization. The overwhelmingly positive response and high engagement levels demonstrate the institutional value of such skill-development initiatives and position participants to become advocates for open-source tools within their academic and professional endeavors.

6. Acknowledgments

The Sanrakshan Society extends its gratitude to:

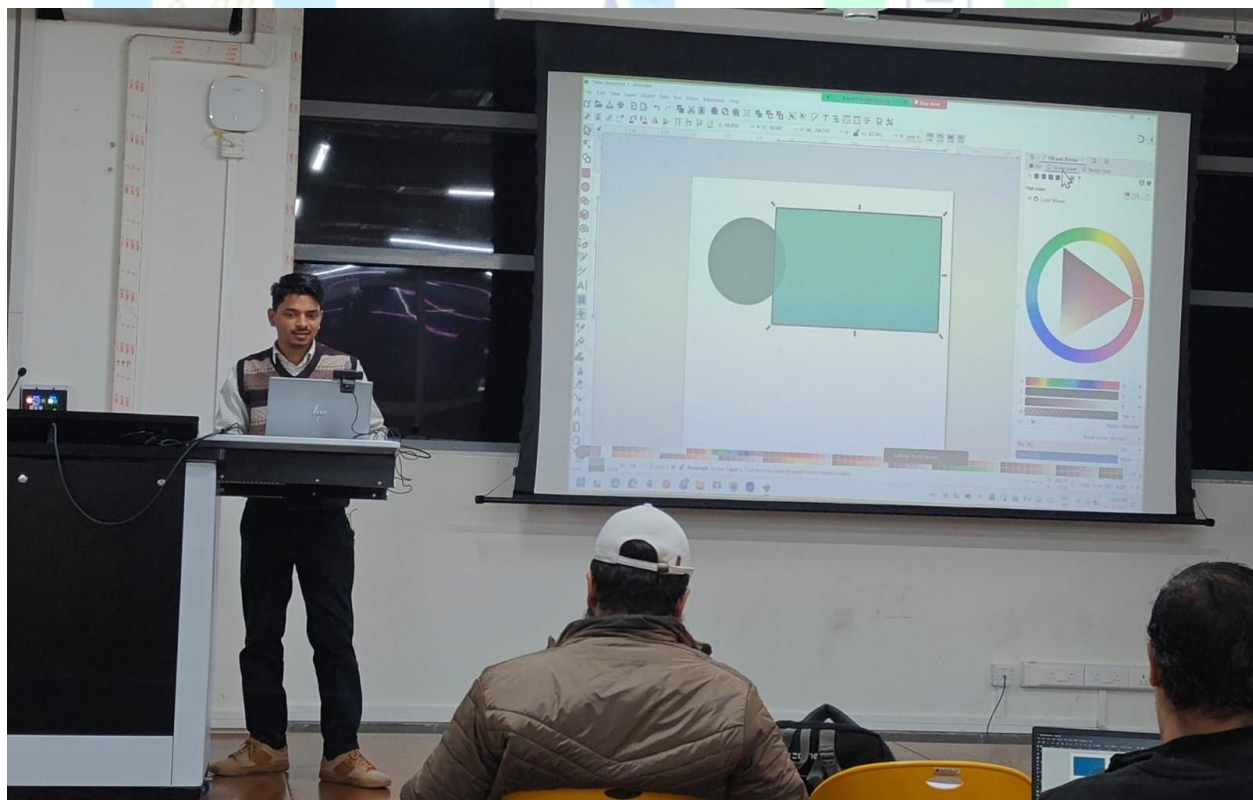
- Prof. Vivek Verma for his expert mentorship and for sharing his personal workflow for scientific illustration.
- Ayushi Singh (Secretary, Sanrakshan Society) and the organizing committee for seamless event coordination.
- The Department of Sustainable Energy Engineering for providing the infrastructure and support necessary to host this successful event.



7. Photo Documentation



Group photo of offline workshop participants from various IIT Kanpur departments.



Prof. Vivek Verma demonstrating vector drawing tools and Inkscape interface to participants.



Participants engaged in hands-on training, applying Bézier tools and node editing techniques.

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