Report on 3D Chemical Compound Modeling Activity

Department of Chemistry, Government College Theog (GC Theog)

Date: 8 August 2025

A 3D Model Making activity was successfully organised by the Department of Chemistry at Government College Theeog (GC Thog) on 8th August 2025. The event was organized for B.Sc. 1st, 2nd, and 3rd year students with the objective of enhancing conceptual understanding of molecular geometry and chemical bonding through hands-on learning. The competition was conducted under the able supervision of Prof. Anamika Ramchaik.

The central theme of the activity was the construction of three-dimensional structures of important chemical compounds, enabling students to visually and practically interpret abstract theoretical concepts such as hybridization, molecular geometry, and isomerism.

Students enthusiastically participated and presented a wide variety of molecular models using creative materials such as thermocol, clay, wires, and colored balls. The models displayed accuracy, innovation, and a deep understanding of chemical structures.

Highlights of Student Contributions:

- **Jatin (B.Sc. 3rd Year)** prepared models of methane and demonstrated the concept of a chiral carbon in methane-like frameworks, explaining tetrahedral geometry and symmetry.
- **Vanshita (B.Sc. 3rd Year)** constructed an octahedral model representing ML_4B_2 type complexes, clearly distinguishing between *cis* and *trans* configurations in coordination compounds.
- **Gaurav (B.Sc. 3rd Year)** presented detailed models of *cis* and *trans* square planar complexes, effectively explaining geometric isomerism.
- **Ankush (B.Sc. 2nd Year)** showcased models of *cis* and *trans* alkenes along with butane conformations, highlighting structural differences and spatial arrangements.
- **Samiksha (B.Sc. 1st Year)** designed trigonal planar geometries for molecules like BCl_3 and BH_3. She also presented a model of the water molecule, explaining its tetrahedral electron geometry and bent molecular shape.
- **Vanshika (B.Sc. 1st Year)** demonstrated five-coordinated systems by constructing models of pentagonal bipyramidal and square pyramidal geometries, showing advanced understanding of coordination chemistry.

Prof. Anamika Ramchaik appreciated the students for their dedication and creativity. She emphasized the importance of visual learning in chemistry and encouraged students to continue exploring such innovative methods to strengthen their understanding.

Conclusion:

The activitya proved to be an enriching academic activity that fostered creativity, teamwork, and a deeper understanding of chemical structures among students. It provided an excellent platform for experiential learning and helped bridge the gap between theory and practice.

The event concluded successfully with positive feedback from both participants and faculty, marking it as a valuable addition to the department's academic initiatives.