2026 Inter-University Chemical Innovation Competition Self Evaluation Rubrics

Criteria	Excellent (9-10)	Good(7-8)	Fair(5-6)	Poor(0-4)
Innovation & Creativity	**Highly original** Breakthrough idea with exceptional innovative approach	**Some novelty** Creative application with clear innovative elements	**Moderately innovative** Shows some innovation but lacks originality	**Little/no novelty** Lacks innovation or originality
Chemical Relevance & Scientific Rigor	**Strong foundation** Excellent chemistry foundation with highly rigorous methodology	**Good application** Good use of chemistry principles, mostly accurate	**Basic chemistry** Basic chemistry applied with some gaps	**Weak/no relevance** Weak or no chemistry relevance
Practicality & Feasibility	**Highly feasible** Technically feasible, safe, near-ready prototype demonstrated	**Feasible** Feasible with minor gaps that can be addressed	**Somewhat feasible** Somewhat feasible but has significant gaps	**Not practical** Not practical or unsafe
Sustainability & Societal Impact	**Strong impact** Strong sustainability considerations with clear societal value	**Moderate impact** Moderate sustainability and positive societal impact	**Limited consideration** Limited consideration of sustainability aspects	**No impact** No sustainability or societal impact
Commercial & Entrepreneurial Potential	**Strong potential** Strong market potential, highly scalable, IP-ready	**Moderate potential** Moderate market value with some scalability	**Low readiness** Low market readiness, limited scalability	**No viability** No commercial viability

Interdisciplinary Integration	**Effective integration** Effective, well-justified integration of disciplines (<30%)	**Reasonable integration** Reasonable integration with clear justification	**Minimal integration** Minimal interdisciplinary elements	**No integration** No meaningful integration
Presentation & Communication	**Excellent delivery** Excellent clarity, highly engaging with strong visuals	**Clear delivery** Clear and logical presentation with adequate visuals	**Understandable** Understandable but weak delivery or visuals	**Unclear** Unclear or poorly presented

Technology Readiness Levels (TRL 0–9) for Chemical Innovations

TRL	Stage	Description (Specific to Chemical / Process Innovations)	Typical Evidence or Output
TRL 0	**Idea / Concept Generation**	Early-stage idea or hypothesis for a new chemical product, reaction pathway, or process — no experimental proof yet.	Concept notes, theoretical models, literature review, or preliminary feasibility thoughts.
TRL 1	**Basic Principles Observed**	Fundamental research begins — underlying scientific principles and chemical reactions are identified.	Lab-scale literature validation, reaction feasibility studies, or thermodynamic modeling.
TRL 2	**Concept Formulated**	The concept is defined — potential raw materials, reaction mechanisms, or process flows proposed.	Reaction pathway proposal, preliminary reaction kinetics or equilibrium data.
TRL 3	**Experimental Proof of Concept**	Small-scale lab experiments confirm theoretical predictions. Reaction demonstrated under controlled conditions.	Bench-scale tests, lab validation data, proof of reaction viability.
TRL 4	**Technology Validated in Lab**	Process integrated at lab scale; key parameters (yield, selectivity, energy input) optimized.	Batch reactor trials, process simulation, material characterization, prototype formulation.

TRL	Stage	Description (Specific to Chemical / Process Innovations)	Typical Evidence or Output
TRL 5	**Technology Validated in Relevant Environment**	Process scaled up from lab to small pilot; tested with real feedstock under semi-continuous conditions.	Pilot reactor operation (1–10 kg/day), impurity management, reproducibility confirmed.
TRL 6	**Prototype Demonstrated in Relevant Environment**	Prototype or mini-plant operates under near-industrial conditions. Focus on performance, safety, and reliability.	100–1000 kg/day demo unit, process flow diagrams (PFD), process hazard analysis (PHA).
TRL 7	**System Prototype Demonstration in Operational Environment**	Full pilot-plant or semi-commercial scale system tested under realistic industrial conditions.	Long-term pilot data, energy and cost optimization, environmental impact assessment.
TRL 8	**System Complete and Qualified**	Technology proven and qualified for full-scale operation. Final process design and quality certification achieved.	Industrial trial results, SLS/ISO/ASTM certifications, SOP documentation.
TRL 9	**Full Commercial Implementation**	Technology deployed in full-scale commercial production. Continuous improvement and market feedback ongoing.	Commercial plant operation, profitability data, customer validation, product registration.

Simplified Categorization

Stage	TRL Range	Phase Focus
Research / Discovery	0–3	Concept, basic science, and early lab validation
Development / Pilot	4–6	Process integration and prototype demonstration
Deployment / Commercialization	7–9	Full-scale validation and market introduction