BASIC PROJECT KLT-RBD
VOLUME VI · KLT-RBD CHEMISTRY

Evidence-D, DHC$_{(}$chem$_{)}$, reper graphs, matched null, blind prediction, and the negative disciplined result

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ENGLISH TRANSLATION — FROZEN EDITION T6-EN-FREEZE-v1.0

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science=ABSTAIN · DHC_chem=OPEN-NOT-CONFIRMED · EXT-RUN=NOT_RUN · truth_layer_promotion=0

Translation contract

This translation is derived only from the frozen Russian source. Formulae, status tokens, checkpoint IDs, numerical values, and proof boundaries are not upgraded or normalized by translation. “ABSTAIN”, “OPEN-NOT-CONFIRMED”, and “NOT_RUN” remain canonical machine-readable status strings.

Terminology policy: Reper is retained as the project term; D_rep means the typed sufficient-foundation coordinate; Dom means domain of applicability; Evidence-D means source-bound evidence discipline; matched null and blind predictive gate retain their statistical meanings.

Contents

Appendices A-T: notation, formula core, theorem/boundary registry, blockers, checkpoint matrix, statistical passport, source register, object/engine/RBD schemas, reproducibility, software firewall, source-carrier policy, review patch contract, freeze receipt, site routes, bibliography, translation glossary, and manifest.

1. Purpose and boundary of Volume VI

Volume VI treats chemistry not as a space for collecting striking numerical coincidences but as a stress test of the reper-projective method. The operational question is whether one can construct a source-oriented multichannel object whose projective-harmonic structure survives control of Dom, units, uncertainty, matched null, multiplicity, blind reveal, and independent verification.

The canonical chain is:

$$F_o \to C@C_{(}chem_{)} \to Rep_{(}chem_{)}(R,I,U;D\_rep) \to \text{Evidence-D} \to \Omega\lambda \to \lambda\text{-profile} \to \text{CGI-vector} \to \text{matched-null} \to \text{blind test} \to \text{certificate} \vee \text{ABSTAIN}.$$

2. Chemistry as a test domain for KLT-RBD

A single chemical reaction symbol may aggregate physically different situations: phases, temperatures, pressures, activities, solvents, catalytic regimes, mechanisms, and measurement methods. KLT-RBD therefore forbids silent data fusion across such states without an explicit morphism and a Dom passport.

Success is defined not by the existence of a visually appealing ratio but by predictive stability against an honest matched null. This moves the method from post-hoc description to a testable research program.

3. C@C(chem): event@state of a chemical object

C@C(chem) separates event from state. The event is a transition, measurement, reaction act, or recorded change; the state is the set of conditions and invariants under which the record has a definite meaning. This prevents values from being transferred between experimental states merely because the chemical formula looks identical.

For $H_2+I_2 \rightleftharpoons 2HI$, the macroscopic equilibrium and the elementary radical act $HI+H\bullet \rightarrow H_2+I\bullet$ are different C@C objects. Their relation is permitted only through a mechanism graph and an RBD morphism preserving stoichiometry, radical balance, Dom, and provenance.

$$C@C(chem)=(event,state;Dom,source,uncertainty,lineage).$$

4. $\mathrm{Rep}_{\langle}\mathrm{chem}_{\rangle}=(R,I,U;D\_rep)$ and typed sufficient foundation

The chemical Reper is written as the quadruple R,I,U,D_rep. The sufficient-foundation coordinate is named D_rep in this freeze to remove the historical collision with Evidence-D levels. D_rep is not a scalar “confidence score”; it identifies why a concrete reper quadruple is admissible in the declared domain.

Without D_rep an object may remain an observation, seed, or gap, but it does not enter the proof layer.

$$\lambda=\mathrm{cr}(U,I;R,D\_rep)=((U-R)(I-D\_rep))/((U-D\_rep)(I-R)).$$

5. λ-truth, cross-ratio, and Ωλ

The λ layer is applied only when four coordinates have been mapped to a compatible dimensionless projective domain Ωλ. A ratio made from dimensionally incompatible quantities is not a λ candidate. Cross-ratio poles and degenerate configurations must be blocked explicitly.

The harmonic value λ=−1 is a structural projective-harmonic condition. In chemistry it is not identical to empirical truth about a mechanism, energy, or kinetic law. Scientific inference additionally requires Evidence-D, Dom, statistical gates, and predictive gates.

6. KMA, $\Gamma_{2,3}$, and the seed layer of rational ratios

The historical KMA layer uses the rational anchors 1/2, 1/3, 3/4, 2/3, 2, and 3 as an exploratory grid. In Volume VI these values are permitted only as a seed/artifact layer. Closeness to an anchor is neither a p-value nor a probability of truth nor chemical proof.

Post-hoc anchor selection is especially dangerous. Anchor policy must be locked before a confirmatory run; otherwise the record remains exploratory and cannot support predictive status.

7. Chemical fiber F_o and typed channels

$$F_o = (\text{stoich}, \text{redox}, \text{energy}, \text{kin}, \text{spec}, \text{cat}, \text{Dom}, \text{D\_rep}, \text{source}, \text{lineage}).$$

A same-object fiber combines only those channels that belong to the same object or are connected by an explicitly defined RBD-morphism. The stoich/redox channels are structural in character; energy, kin, spec, and cat require a numerical Dom, units, and a transformation to an admissible dimensionless projection. Projection and identity are always distinguished.

In particular, the molecular spectral constants of H_2, I_2, and HI cannot automatically serve as an atomic spectral channel for H• and I•. Such mixing was explicitly prohibited in v115 and transferred to the blocker layer.

8. Evidence-$D_{(chem)}$ and the ladder E^{D}_{0}…E^{D}_{4}

To remove the D^{0}/D0 notation collision, the levels of source support are denoted $E^{D}_{0},\ldots,E^{D}_{4}$ and are not mixed with D_rep. The ladder describes the maturity of an evidence object, but it does not replace the content of that object.

$$E^{D}_{0} < E^{D}_{1} < E^{D}_{2} < E^{D}_{3} < E^{D}_{4}.$$

Level	Minimum content	Permitted status
E^{D}_{0}	source identifier / source route	source target
E^{D}_{1}	bibliographic identity and locator	source-bound
E^{D}_{2}	value + unit + Dom	normalized observation
E^{D}_{3}	uncertainty / method / lineage + transformation control	analysis-ready
E^{D}_{4}	reproducible package + prereg/null/blind passport	candidate-input, not truth

9. Dom, units, uncertainty, and source-bound provenance

Dom is the type of the domain of applicability: temperature, pressure, phase, solvent, ionic strength, bath gas, instrument, method, calibration, and other conditions. Transfer of a value between Dom instances is permitted only through an explicit transfer law. The absence of such a law creates a blocker.

For acid-base and electrolyte tasks, concentration does not replace activity without a model of activity coefficients. In electrochemistry, equilibrium potential is not merged with junction, transport, IR, and kinetic effects. These rules are recorded in blocker ledger B036-B038.

10. DHC(chem) as a multichannel projective construction

DHC(chem) was introduced as an attempt to move from a single λ-hit to a coherent multichannel geometry. The observed channel triangle is compared with a pre-fixed anchor configuration, while auxiliary channels act as projection checks.

$$DHC_\rho = \Phi(\Delta_{obs}, \Delta_{anchor}, \Pi_{channels}, cr, Dom, D_{rep}).$$

The seed edition v97 used a linear combination of C_center, C_axis, C_harm, and C_spec. In v103 this expression was reinterpreted as a protocol rather than a universal metric truth. A DHC value without statistical and predictive control remains a geometric diagnostic signal.

11. Matched-class null and plus-one permutation p-value

The matched-class null preserves those characteristics that could artificially create structure: class_id, channel signature, Dom-class, Evidence-D quality, projection_status, numerical bins, and lineage constraints. The null model must not turn a real class into a comparison with an arbitrary mixture of objects.

$$p\_class = (1 + \#\{j : S\_null^{(j)} \geq S\_real\})/(1+N).$$

The plus-one form excludes zero permutation p-values when only a finite number of random permutations is used. In this volume it is treated as a computational discipline, not as an independent proof of the chemical hypothesis.

12. Multiplicity and the FDR dependence passport

Patch P12-002 removes the hidden assumption that BH/FDR is automatically applicable. A locked family is not sufficient by itself: the dependence mode and a procedure valid for that mode must be fixed in advance.

$$G\_FDR=PASS \Leftrightarrow family\_locked \wedge dependence\_mode \in \{INDEPENDENT,PRDS,CERTIFIED\_OTHER\} \wedge procedure\_valid\_for(dependence\_mode).$$

$$otherwise:\ outcome=ABSTAIN(FDR\text{-}DOM).$$

Every multiplicity family must contain dependence_mode and procedure_id. If CERTIFIED_OTHER is used, the corresponding dependence-robust procedure must be defined before the holdout is revealed. A computed q is not interpreted as a universal FDR guarantee outside the domain of the theorem governing the applied procedure.

13. Lineage components, n_eff, and the confidence passport

Patch P12-003 types the statistical unit. Several correlated rows from one lineage component are not several independent observations. Effective sample size is therefore constructed from independent components.

$$n_{eff} = |C_{holdout}|, \qquad \hat{p} = (1/n_{eff}) \Sigma_{c \in C_{holdout}} Y_c, \quad Y_c \in \{0,1\}.$$

A Wilson interval is admissible only when independence of the Bernoulli components is certified in the declared Dom. Otherwise a preselected cluster-valid procedure is used; until then, outcome=ABSTAIN(CONF-UNIT). Mandatory fields are sample_unit, dependence_certificate, and interval_method.

14. Blind predictive gate and falsification criteria

The blind protocol separates prediction from postdiction. HiddenChannel, AnchorPolicy, NullModel, and Thresholds are fixed before the hidden channel is revealed. After locking, the visible channels are used for reconstruction/prediction, and the result is compared with the matched null.

Class support is possible only when preregistration, the minimum-effect requirement, the multiplicity gate, source/Dom completeness, and predictive superiority all hold simultaneously. Failure of any mandatory gate is not “repaired” by changing the anchor or threshold after inspecting the result.

- Support: prelocked protocol, sufficient n_eff, effect gate, valid null, multiplicity passport, and blind superiority.
- Falsification/boundary: DHC_real≤DHC_null, p above threshold, CGI/blocker gate failed, or blind prediction does not outperform the matched null.

15. v95: NO_2/N_2O_4 — kinetic exact row and narrow null

The first strict chemical test showed that a same-object construction is not sufficient by itself. The kinetic row and narrow null did not justify candidate status; the early signal remained at review level.

Source trace: v95

> *NO_2/N_2O_4 is treated as an early same-object kinetic/narrow-null test. The result did not pass the candidate gate and was preserved as review_required_not_candidate.*
>
> *Methodological contribution of v95: even with a convenient same-object object, numerical proximity and a kinetic row do not replace a null model and source-oriented verification.*

Carrier/locator: ХИМИЯ KLT-RBD.pdf / chem_archive.txt lines 1914+

16. v96: CO+OH — experimental same-object branch

The CO+OH branch strengthened the empirical same-object layer, but the p_null and CGI controls did not support a candidate. This negative episode became an argument against “fitting” isolated λ values.

Source trace: v96

> *CO+OH -> CO_2+H opened an experimental same-object branch. The later v106 summary records CGI_lambda96=1.08 and p_null=0.8901; thus the branch did not support candidate status.*
>
> *The negative result motivated the transition to class harvest and matched-class null rather than continued adjustment of an isolated ratio.*

Carrier/locator: ХИМИЯ KLT-RBD.pdf / lines 1769+

17. v97: introduction of DHC₍chem₎

DHC₍chem₎ emerged as a response to the weakness of an isolated ratio: analysis moves to a multichannel configuration. v97 remains seed geometry, not truth-status.

Source trace: v97

> *DHC_chem was introduced as Desargues-harmonic seed geometry: coordination of the channel triangle and the center/axis/harmonic/spectral components.*
>
> *Status of v97: seed_signal_only. The score serves as a detector of structural pattern, not as statistical proof.*

Carrier/locator: ХИМИЯ KLT-RBD.pdf / lines 1658+

18. v98: reaction-class statistics and underpower

v98 shows that a geometric score without a sufficiently large class is statistically underdetermined. Insufficient power became an explicit blocker rather than a reason to weaken the threshold.

Source trace: v98

> *Reaction-class statistics showed that the homogeneous class was too small. In the v106 summary, blocker BLK-106-003 records n<5 for class-level inference.*
>
> *Underpower is recorded as a critical blocker: the threshold is not weakened in order to preserve the hypothesis.*

Carrier/locator: ХИМИЯ KLT-RBD.pdf / lines 1511+

19. v99: predictive-test protocol

v99 opens the predictive branch: the criterion of success moves from describing known channels to predicting a hidden channel within a predefined protocol.

Source trace: v99

> *A predictive-test protocol is opened. The objective shifts from explaining visible numbers to predicting a channel that was hidden in advance.*
>
> *The status remains opened_without_truth_status: a protocol is a necessary condition for a test, not an empirical result.*

Carrier/locator: ХИМИЯ KLT-RBD.pdf / lines 1382+

20. v100: doctrine chapter without truth-status

v100 assembles the chemistry doctrine chapter but fixes it as a research architecture without empirical promotion. This is an important boundary between the philosophical program and evidential status.

Source trace: v100

> *The chemistry doctrine chapter combines C@C, Reper, λ, CGI, DHC, null, and prediction into a single chemical route.*
>
> *The main v100 boundary is that the doctrine may be mathematically organized while still remaining without truth-status until a class, a null model, and blind prediction are available.*

Carrier/locator: ХИМИЯ KLT-RBD.pdf / lines 1218+

21. v101: class harvest

v101 introduces class harvest as the source of future statistical power. A registry of candidate objects is not the same as a set of independent valid observations; lineage and Dom must be accounted for separately.

Source trace: v101

> *Class harvest is opened. The target registry is not equated with an independent sample; required fields include object/class identity, channel signature, Dom, Evidence-D, and source quality.*
>
> *This checkpoint prepares the statistical object but does not create a class-candidate.*

Carrier/locator: ХИМИЯ KLT-RBD.pdf / lines 1025+

22. v102: Evidence-D normalization

v102 makes source/Dom normalization a mandatory input gate. A row without D_source_id and Dom_id does not participate in candidate inference.

Source trace: v102

> *Evidence-D normalization makes D_source_id, Dom_id, units, and quality/uncertainty mandatory. A row without D_source_id and Dom_id does not support a candidate.*
>
> *Normalization separates identity, projection, and RBD-morphism and forbids mixing experimental conditions without an explicit transfer law.*

Carrier/locator: ХИМИЯ KLT-RBD.pdf / lines 862+

23. v103: DHC formalization

v103 transforms DHC from a seed index into a formal object with a projective channel map, a prohibition on posthoc anchors, and an explicit identity/projection/morphism boundary.

Source trace: v103

DHC_chem is formalized as:

$$DHC\_rho = Phi(Delta\_obs, Delta\_anchor, Pi\_channels, cr, Dom, D)$$

Key requirements are a predeclared anchor policy, separation of channel types, scale/projective correctness, and explicit blockers for degenerate configurations.

Carrier/locator: ХИМИЯ KLT-RBD.pdf / lines 736+

24. v104: matched-class null

v104 defines a null model that preserves the class and the source structure. A high score without an honest null remains only a seed geometry signal.

Source trace: v104

> *The matched-class null preserves class, channel signature, Dom, Evidence-D quality, projection status, and numeric bins.*
>
> *A plus-one permutation p-value is used for the finite Monte Carlo/permutation baseline. A high DHC without this null remains a seed signal.*

Carrier/locator: ХИМИЯ KLT-RBD.pdf / lines 571+

25. v105: blind predictive test

v105 formalizes a one-shot hidden-channel protocol. In the current corpus the gate was opened, but it was not executed on a sufficiently large homogeneous class.

Source trace: v105

> *HiddenChannel, AnchorPolicy, Thresholds, and NullModel are fixed before reveal. The prediction is compared with the matched-class null.*
>
> *In the v105 corpus the gate was formally opened, but a full class dataset was absent; truth-status was not promoted.*

Carrier/locator: ХИМИЯ KLT-RBD.pdf / lines 380+

26. v106: KLT-RBD-CHEM update

v106 registers prediction, blocker, theorem, and null cards in RBD and fixes the principle that database registration of an object is not a promotion of its scientific status.

$$\text{RBD-registration} \neq \lambda\text{-domain-candidate} \neq \text{truth-status}.$$

Checkpoint	Result	Truth promotion
v95	review_required_not_candidate	no
v96	review_required_not_candidate	no
v97	seed_signal_only	no
v98	underpowered	no
v99	predictive protocol opened	no
v100	doctrine closed without truth-status	no
v101-v105	gates/harvest/formalization	no
v106	rbd_registered_without_truth_status	no

Source trace: v106

> *The results of v95-v105 are registered in KLT-RBD-CHEM as prediction-cards, blocker-cards, theorem-candidates, null-cards, and a status ledger.*
>
> *The v106 summary principle is RBD-registration != lambda-domain-candidate != truth-status; for every checkpoint v95-v106, truth promotion = no.*

Carrier/locator: ХИМИЯ KLT-RBD.pdf / lines 299+

27. v107-v110: article, engine, reproducibility pack, and monograph patch

v107-v110 convert the chemistry branch from a sequence of research checkpoints into a publication and reproducibility circuit. v107 formulates a bilingual protocol article; v108 creates the DHC-engine; v109 fixes a reproducibility pack; and v110 integrates the results into the monograph structure. None of these steps is an independent empirical replication.

engine PASS ≠ EXT-RUN ≠ CHEMICAL_TRUTH.

Source trace: v107

The bilingual protocol article formulates the same-object fiber, DHC_chem, Evidence-D, matched-class null, and blind predictive gate as a publication circuit.

The article explicitly fixes its status as protocol article without truth-status.

Carrier/locator: ХИМИЯ KLT-RBD.pdf / protocol article

Source trace: v108

The DHC-engine introduces Parser, EvidenceDNormalizer, ChannelMapper, DHCBuilder, MatchedClassNull, BlindPredictionMasker, CGICalculator, RBDExporter, and StatusLedger.

Prototype outputs for NO2/N2O4 and CO+OH remain blocked_without_truth_status; executable mechanics are not scientific validation.

Carrier/locator: ХИМИЯ KLT-RBD.pdf / DHC-engine

Source trace: v109

The reproducibility pack fixes raw/processed data, scripts, figures/reports, checksums, and README so that an external reviewer can replay data -> DHC -> null -> prediction -> RBD cards.

The reproducibility route does not substitute for an independent EXT-RUN.

Carrier/locator: v32-168.pdf / reproducibility pack

Source trace: v110

The monograph patch integrates v95-v109 into a coherent chemistry section and fixes the boundary seed-signal != class-candidate != predictive-lambda-domain-candidate != truth-status.

Carrier/locator: v32-168.pdf / monograph patch

28. v111-v115: real Evidence-D, spectral channels, and the iodine-hydrogen branch

This phase deliberately tests whether the status changes when the project moves from demonstration/synthetic cards to real source-bound rows. v111 expands the class dataset, but independent_valid_n remains below the exploratory gate. v112 imports a thermochemical package for $H_2/I_2/HI$; v113 adds diatomic spectral constants; v114 finds an elementary kinetic row $HI+H\bullet \rightarrow H_2+I\bullet$; v115 opens a homogeneous elementary-class registry, but source-bound n remains 1.

For $H_2(g)+I_2(g) \rightleftharpoons 2HI(g)$, v112 records derived Evidence-D values: $\Delta rH \approx -9.420$ kJ/mol, $\Delta rS \approx 21.813$ J mol^{-1} K^{-1}, $\Delta rG \approx -15.924$ kJ/mol, and $Kp(298.15\ K) \approx 616.147$. These are derived thermodynamic rows, not a DHC proof.

In v113 the archived I_2 spectral row contains a B_e value that must be rechecked against the primary NIST carrier before any new numerical use. The freeze preserves the historical record but does not convert it into a verified numerical basis for a new inference.

Source trace: v111

Class dataset expansion reaches the target registry, but independent_valid_n=2<5. A nominal row count does not replace independent effective sample size.

Carrier/locator: v32-168.pdf / class dataset expansion

Source trace: v112

For H2(g)+I2(g)<->2HI(g), source-bound NIST thermochemistry rows are imported. Derived values: Delta_rH=-9.420 kJ/mol, Delta_rS=21.813 J/mol/K, Delta_rG=-15.924 kJ/mol, Kp(298.15K)=616.147.

These are Evidence-D derived rows, not DHC proof; independent_valid_n_strict_class=2<5.

Carrier/locator: v32-168.pdf / real Evidence-D import

Source trace: v113

NIST diatomic constants are converted into molecular spectral-channel rows for H2, I2, and HI; the exact kinetic row for the macroscopic reaction remains a blocker.

Some derived ratios are close to rational anchors, but the posthoc-anchor warning remains; none receives candidate status.

Carrier/locator: v32-168.pdf / kinetic/spec numeric extraction

Source trace: v114

The search for a direct macro kinetic row remains open. An elementary row HI+H· -> H2+I· at 298 K is found (Vasileiadis & Benson, 1997; NIST kinetics route).

It opens the elementary-switch branch but is not identical to the macro equilibrium without a mechanism graph/RBD-morphism.

Carrier/locator: v32-168.pdf / kinetic source search

Source trace: v115

CLS-IODINE-HYDROGEN-RADICAL-ELEMENTARY is created with five target reactions, but source_bound_elementary_rows=1.

Mixing molecular diatomic spectra with atomic H/I spectra is explicitly forbidden; the macro-to-elementary morphism requires stoichiometric closure, radical balance, and Dom preservation.

Carrier/locator: v32-168.pdf / iodine-hydrogen elementary class

29. v116: status theorem and negative disciplined closure

v116 is the upper scientific boundary of the chemistry line v95-v115. It does not claim that the hypothesis has been “refuted in nature.” It states a narrower and testable conclusion: in the examined corpus, no object or class was obtained that simultaneously passes all mandatory gates.

Freeze theorem T6-STAT-116

In the chemistry branch v95-v115, no object or class of objects was obtained for which D/Dom completeness, the CGI-class blocker gate, the prescribed p-class threshold at a sufficient independent class size, and successful blind prediction are all satisfied simultaneously. Therefore, at the level of this corpus, the chemistry hypothesis does not receive class-candidate, predictive-λ-domain-candidate, or truth-status.

Evidence chain

- v111: the target registry is expanded, but independent_valid_n=2<5.
- v112-v113: Evidence-D and spectral layers for H_2/I_2/HI are improved, but the exact macro kinetic row remains unresolved.
- v114: an elementary kinetic bridge HI+H• → H_2+I• is found; it is not identical to the macro equilibrium without an RBD-morphism.
- v115: the elementary class registry is opened, but source_bound_elementary_rows=1<5; atomic/molecular spectral separation and blind/null gates remain open.
- Therefore the joint gate condition is not satisfied; status promotion is forbidden.

$$\text{seed-signal} \neq \text{class-candidate} \neq \text{predictive-}\lambda\text{-domain-candidate} \neq \text{truth-status}.$$

This freeze theorem determines the status of the present volume: DHC_chem remains OPEN-NOT-CONFIRMED, and the correct global scientific response is ABSTAIN.

Source trace: v116

> *The final chemistry checkpoint fixes a negative disciplined closure: in v95-v115 no object/class simultaneously passes D/Dom, CGI/blocker, class statistics, matched-null, and blind prediction.*
>
> *The DHC_chem hypothesis remains open but unconfirmed; the chemistry cycle is frozen until a new external Evidence-D class and independent verification are available.*

Carrier/locator: v32-168.pdf / final chemistry monograph and physics roadmap

30. ChemGraph, software firewall, frozen blockers, and the next external cycle

ChemGraph connects source objects, Reper cards, domain records, null/blind passports, blockers, and the status ledger. The software system must be stricter than the prose: absence of a required field must lead to BLOCKER/ABSTAIN, not to silent insertion of a default value.

Legacy scalar Auth=1/(1+δ) and scalar CRI are retained only as diagnostic closeness measures. They are not truth, probability, or chemical support. Any scalarization must be typed within Dom and cannot replace the vector CGI/gap profile. T6-B032 remains OPEN until a typed adapter exists.

Frozen chemistry blockers

- increase the independent homogeneous class to the preregistered n_eff;
- separate molecular and atomic spectral channels;
- construct an explicit RBD-morphism between macro equilibrium and the elementary mechanism graph;
- execute a strict matched-class null with a dependence passport;
- execute a blind hidden-channel run with one-shot reveal;
- obtain an external independent EXT-RUN replication;
- restore the complete proof/source ledger for the historical FC-gate.

The next scientific cycle can be opened only by new source-bound data or by external replication. Recomputing already known rows with a new anchor is not a new experiment.

Appendix A. Canonical notation

Symbol	Type	Meaning
C@C(chem)	event@state object	event and state of a chemical record
Rep(chem)	typed reper	(R,I,U;D_rep)
D_rep	foundation coordinate	sufficient foundation of the reper
E^D_0…E^D_4	evidence ladder	Evidence-D levels
Dom	domain passport	domain of applicability
Ωλ	admissible projective domain	cross-ratio domain
DHC(chem)	protocol geometry	multichannel coherence construction
CGI	vector gap profile	set of independent gaps; not a truth-score
EXT-RUN	external run	independent external verification
ABSTAIN	status	no inference while a required gate remains open

Appendix B. Formula core of the freeze

$$C@C(chem)=(event,state;Dom,source,uncertainty,lineage)$$

$$Rep(chem)=(R,I,U;D\_rep)$$

$$\lambda=cr(U,I;R,D\_rep)=((U-R)(I-D\_rep))/((U-D\_rep)(I-R))$$

$$F_o=(stoich,redox,energy,kin,spec,cat,Dom,D\_rep,source,lineage)$$

$$DHC\_\rho=\Phi(\Delta\_obs,\Delta\_anchor,\Pi\_channels,cr,Dom,D\_rep)$$

$$p\_class=(1+\#\{j:S\_null^{(j)}\geq S\_real\})/(1+N)$$

$$G\_FDR=family\_locked \wedge dependence\_mode \wedge procedure\_valid$$

$$n\_eff=|C\_holdout|;\ \hat{p}=(1/n\_eff)\Sigma Y\_c$$

$$candidate \Rightarrow D/Dom \wedge null \wedge multiplicity \wedge effect \wedge blind \wedge provenance$$

$$engine\_PASS \neq EXT\_RUN \neq truth\_status$$

Note: review v0.11 reports that the former v0.10 master contained 194 formula IDs. This source-traced freeze does not reconstruct missing historical IDs from memory; it fixes the semantic formula core and preserves restoration of the historical proof ledger as a separate archival obligation.

Appendix C. Theorem/boundary registry freeze

ID	Statement	Status
T6-BND-001	λ=−1 is a projective-harmonic structural condition, not chemical truth	BOUNDARY
T6-BND-002	a row without D_source_id/Dom_id does not participate in candidate inference	PROTOCOL
T6-BND-003	matched null is required before class support	PROTOCOL
T6-BND-004	the blind channel is fixed before reveal	PROTOCOL
T6-STAT-116	no object in v95-v115 passed the conjunction of mandatory gates	SOURCE-TRACE PROVED
T6-BND-005	a software diagnostic scalar is not probability/truth	BOUNDARY
T6-BND-006	EXT-RUN=NOT_RUN cannot be replaced by fixture/selftest PASS	BOUNDARY

The historical table of 92 theorem/boundary records from v0.10 is not replaced by this compact freeze table. For T6-RA5 it must be restored/verified as a separate proof object.

Appendix D. Blocker ledger T6-B035…T6-B041

ID	Impact	Resolution
T6-B035	Didactic cards cannot support an empirical chemistry inference.	Keep DIDACTIC/SYNTHETIC or replace with a source-bound measured dossier containing real null/blind/EXT evidence.
T6-B036	The acid-base adapter is not authorized for real activity calculations.	Fix T, solvent, ionic strength, activity model, γ_i, uncertainty, calibration, and raw source.
T6-B037	Ksp/speciation comparisons do not share a single domain of applicability.	Provide a T-dependent Ksp source/version, phase, solvent, ionic strength, speciation model, and raw measurements.
T6-B038	Equilibrium potential cannot be separated from junction, transport, IR, and kinetic effects.	Fix electrode/reference/junction/transport passport, activities, current efficiency, and uncertainty.
T6-B039	The organic mechanism remains underdetermined.	Build a source-bound kinetic/stereo/isotope/spectral class plus a competing-mechanism graph with exclusions.
T6-B040	A material state/defect inference is not	Fix phase, defect, process history, sample

	portable without history and metrology.	lineage, metrology, uncertainty, and transport witness.
T6-B041	Educational/expert score lacks external calibration and must not be treated as an objective estimate.	Run a blinded benchmark with independent experts, a predeclared rubric, inter-rater reliability, and an appeal protocol.

Appendix E. Checkpoint matrix v95-v116

Checkpoint	Result	Truth promotion
v95	review; no candidate	no
v96	review; no candidate	no
v97	seed geometry	no
v98	underpowered	no
v99	protocol opened	no
v100	doctrine without truth	no
v101	harvest opened	no
v102	Evidence-D normalized	no
v103	formalization	no
v104	matched-null formalized	no
v105	blind protocol opened	no
v106	RBD registered	no
v107	protocol article	no
v108	engine prototype	no
v109	reproducibility route	no
v110	monograph patch	no
v111	n independent < gate	no
v112	real evidence partial	no
v113	spectral partial; kinetic blocker	no
v114	elementary bridge	no

v115	source_bound n=1	no
v116	negative disciplined closure	no

Appendix F. Statistical passport for a confirmatory family

Field	Required value
family_id	preregistered family identifier
family_locked	true before reveal
dependence_mode	INDEPENDENT / PRDS / CERTIFIED_OTHER
procedure_id	multiplicity procedure valid for the declared mode
sample_unit	lineage component / another pretyped unit
dependence_certificate	basis for independence/cluster dependence
interval_method	Wilson for independent Bernoulli units or a cluster-valid method
effect_threshold	ε_min before reveal
null_model	matched-class preserving Dom/signature/quality
hidden_channel	locked before computation
outcome	support / falsification / ABSTAIN with reason

Appendix G. Source register and authority classes

canonical_id	Source/carrier	Authority	Locator/role
SRC-T6-CHEM-ARCH	ХИМИЯ KLT-RBD.pdf · Google Drive mirror	AUTHOR-ARCHIVE	v95-v108 checkpoints; 1438-page carrier
SRC-V32-168	v32-168.pdf · Google Drive mirror	AUTHOR-ARCHIVE	v109-v116 + cross-domain archive
SRC-T6-REV011	T6-RU-REVIEW-v0.11	REVIEW-CONTROL	P12/FC contract
SRC-NIST-WB	NIST Chemistry WebBook SRD 69	PRIMARY/EVALUATED	thermochemistry, molecular constants
SRC-NIST-KIN	NIST Chemical Kinetics Database	PRIMARY/EVALUATED	kinetic source routes

SRC-BH1995	Benjamini & Hochberg, 1995	CLASSIC-STAT	FDR under independence
SRC-BY2001	Benjamini & Yekutieli, 2001	CLASSIC-STAT	FDR under dependency classes
SRC-PS2010	Phipson & Smyth, 2010	STAT-METHOD	permutation p-values not zero
SRC-SITE	https://kurpishev.com	AUTHOR-ARCHIVE	public articles/monographs; archive authority, not numbering authority

Source-ledger rule: every substantive citation must have canonical_id, sha256 (for a byte carrier), locator, accessed_at/edition, and authority_class. If a page/section locator is absent, record a NO-LOCATOR blocker; a hash does not replace a locator.

Appendix H. Key source-bound chemistry examples

NO_2/N_2O_4 and CO+OH are used as historical examples of gate-architecture development, not as proof of a general DHC hypothesis. H_2/I_2/HI is used as an example of stronger Evidence-D and of the need to separate thermodynamics, molecular spectroscopy, elementary kinetics, and the macroscopic mechanism.

For v114, Vasileiadis & Benson (1997) supports the elementary kinetic bridge $H+HI \rightarrow H_2+I$ at 298 K; it does not authorize identity of that row with the macroscopic equilibrium $H_2+I_2 \rightleftharpoons 2HI$.

Appendix I. Minimal chemical-object schema

ChemicalRow=(object_id,class_id,reaction,channel,value,unit,Dom_id,D_source_id,projection_status,quality_flag,uncertainty,lineage_id,hidden_flag).

Missing Dom_id or D_source_id moves the row to blocker status; hidden_flag is governed by the blind protocol; projection_status distinguishes identity from projection/RBD-morphism.

Appendix J. DHC-engine schema

E_ENGINE=(Parser,EvidenceDNormalizer,ChannelMapper,DHCBuilder,MatchedClassNull,BlindPredictionMasker,CGICalculator,RBDExporter,StatusLedger).

Every module must preserve typed D/Dom. Engine output may be reproducible mechanics while science remains ABSTAIN.

Appendix K. ChemGraph/RBD card schema

Card	Minimum fields
source-card	canonical_id, hash, locator, authority, Dom
reper-card	R,I,U,D_rep, Ωλ, provenance
null-card	family_id, matching variables, seed, N, procedure

prediction-card	visible channels, hidden channel, prelock, loss, null comparison
blocker-card	id, impact, resolution, status
theorem-card	statement, assumptions, dependencies, boundary, proof_object
status-ledger	candidate class, gates, outcome, no-promotion receipt

Appendix L. Reproducibility contract

- freeze raw inputs and hashes
- normalize with a versioned transformation log
- execute DHC with recorded parameters
- run matched null with a fixed seed/procedure
- execute blind mask/reveal exactly once
- export cards/status ledger
- store software/version/environment metadata
- preserve negative/null outcomes

Appendix M. Software semantic firewall

$$\text{legacy\_Auth}, \text{legacy\_CRI} \to \text{diagnostic\_only};\ \ \text{diagnostic\_only} \not\to \text{truth/probability/chemical\_support}.$$

A typed adapter must return a vector gap profile and record scalarization weights in Dom. Until then, ChemGraph does not use a legacy scalar in Support$_\pi$.

Appendix N. Source-carrier policy

A problematic PDF carrier is not replaced by an “improved” original file. A normalized archival copy is created with a new hash and an explicit link to the original hash. Until byte portability is verified, bytes may be excluded from the FC bundle while the canonical reference/hash is preserved.

Appendix O. Review patch contract P12-001…P12-008

Patch	Freeze implementation	Historical FC status
P12-001	D_rep / E^D_k separated	implemented in text; historical master diff pending
P12-002	FDR dependence gate included	implemented in text
P12-003	lineage n_eff/confidence passport included	implemented in text
P12-004	proof fields defined; 92 historical records not reconstructed	OPEN-ARCHIVE

P12-005	new freeze is fully English; 70 original_en historical records are not substituted	OPEN-ARCHIVE
P12-006	B035-B041 impact/resolution transferred	implemented
P12-007	source schema/registry included; complete historical ledger requires restoration	PARTIAL-ARCHIVE
P12-008	normalize-or-exclude policy included	implemented as policy

Appendix P. Freeze receipt

Gate	Freeze result
Text structure	PASS: 30 chapters + A-T
Science locks	PASS: unchanged
D notation	PASS in freeze text
FDR passport	PASS in freeze text
Lineage interval passport	PASS in freeze text
Blocker B035-B041	PASS in freeze text
Historical 92-record proof graph	OPEN-ARCHIVE; not falsely closed
Historical source ledger	PARTIAL-ARCHIVE
DOCX/PDF render QA	PASS; final receipt recorded in manifest
T6-RA5	NOT_ISSUED

Appendix Q. Public archive and routes

The author authorizes the entire site https://kurpishev.com to be used as an archive of articles and monographs. In this freeze, the site is treated as a source archive. Navigation schemes and historical volume-numbering variants on the site do not redefine the present August contract, in which Volume VI is the chemistry volume of KLT-RBD.

- Main: https://kurpishev.com
- KLT-RBD Chem v116 RU: public card on the archive home page; PDF route: https://kurpishev.com/KLT_monographv32_116.pdf
- KLT-RBD Chem v116 EN: PDF route: https://kurpishev.com/KLT_monographv32_116_en.pdf

For publication, the freeze follows the add-only rule: existing archive materials are not deleted and are not retroactively assigned a higher scientific status.

Appendix R. Bibliography

1. Kurpishev, I.B. KLT2 PIX@PEAKS CHEM checkpoints v95-v116. Author archive, 2026. https://kurpishev.com

2. Kurpishev, I.B. T6-RU-REVIEW-v0.11. Scientific-editorial review, 11 Aug 2026.

3. NIST Chemistry WebBook, SRD 69. https://webbook.nist.gov/chemistry/

4. NIST Chemical Kinetics Database. https://kinetics.nist.gov/kinetics/

5. Huber, K.P.; Herzberg, G. Constants of Diatomic Molecules. Molecular Spectra and Molecular Structure IV, 1979; data compiled in NIST Chemistry WebBook.

6. Vasileiadis, S.; Benson, S.W. Kinetic study of H + HI -> H2 + I at 298 K. International Journal of Chemical Kinetics 29 (1997), 915-925.

7. Benjamini, Y.; Hochberg, Y. Controlling the False Discovery Rate: A Practical and Powerful Approach to Multiple Testing. JRSS B 57 (1995), 289-300.

8. Benjamini, Y.; Yekutieli, D. The Control of the False Discovery Rate in Multiple Testing under Dependency. Annals of Statistics 29 (2001), 1165-1188.

9. Phipson, B.; Smyth, G.K. Permutation P-values Should Never Be Zero. Statistical Applications in Genetics and Molecular Biology 9 (2010).

10. IUPAC Gold Book. Activity; rate of reaction; kinetic electrolyte effect. https://goldbook.iupac.org/

11. NIST FIPS 180-4. Secure Hash Standard (SHS). https://csrc.nist.gov/pubs/fips/180-4/upd1/final

Appendix S. Translation glossary RU-EN-ZH

RU	EN	中文
репер	reper / reference frame element	标架元 / 参照元
достаточное основание	sufficient foundation	充分根据
область применимости	domain of applicability	适用域
событие@состояние	event@state	事件@状态
источниковая обеспеченность	source-bound evidence	源定据
согласованный нуль	matched null	匹配零模型
слепой предсказательный тест	blind predictive test	盲预测检验
разрыв/блокер	gap/blocker	缺口/阻断项
воздержание от вывода	ABSTAIN	暂不作结论
отрицательно-дисциплинарный результат	negative disciplined result	负向约束性结果
не подтверждено	not confirmed	未确认
внешний независимый прогон	independent external run	独立外部复现实验

Appendix T. Manifest fields

The final freeze manifest is stored beside the DOCX/PDF and contains SHA-256 hashes of the final files, hashes of the source carrier files, build date, page count, science locks, and QA receipt. The manifest is part of the freeze; changing any byte creates a new version.

Final authorial fixation

Volume VI freezes the chemistry branch not as a proven universal law but as a strict research circuit that moved from a λ-seed through Evidence-D, matched null, blind protocol, real-data import, and the negative status theorem v116. The scientific value of this stage lies in the method’s ability not to promote status where its own rules have not been satisfied.

science=ABSTAIN; DHC_chem=OPEN-NOT-CONFIRMED; EXT-RUN=NOT_RUN; truth_layer_promotion=0.

Any future version claiming a higher status must present a new source-bound corpus, a preregistered statistical passport, blind prediction, and independent external replication. Until then, this edition is the canonical frozen English translation of Volume VI derived from T6-RU-FREEZE-v1.0.