

1. Kino Kode : Next state = transform of current state + a structured nudge.
2. state = the thing you measure (populations, coherence, activity)
3. transform = coupling plus decoherence
4. nudge = brief spin/vibration/light “kick”
5. Core prediction. Coherence lifetime vs organoid diameter has one peak near ~150 um. Purely classical models give monotone or flat curves.
6. Pre-registered pass/fail. Support only if all three hold: (a) peak at 150 +/- 40 um, (b) phase-locked RF changes the signal while phase-scrambled does not, (c) resource-gap index > 0 (see #7). Otherwise: disconfirm.
7. Sizes and controls. Test 75 / 150 / 300 / 600 um (about +/-10%). Same media, 37 C, same perfusion. Check dissolved O₂; exclude hypoxic cores.
8. Readout. NV-diamond magnetic relaxometry (report relaxation and dephasing times). or Ultrafast spectroscopy (report coherence beat size and decay, with confidence intervals).
9. RF-jitter protocol. Interleave phase-locked vs phase-scrambled RF near candidate bands. Double-blind A/B labels.
10. Decision metric (in words). Resource-gap index = (measured value minus best classical prediction) divided by total measurement uncertainty. Compute at every size.
11. Classical baselines (locked before testing). Oxygen/diffusion model; RF/optical heating budget (reject runs with $\Delta T > 0.2$ C); colored-noise models fit on controls.
12. Causal knobs. Partial deuteration (expect peak shift or flattening if vibronic). Paramagnetic dopants or spin labels (expect drop in RF sensitivity and peak height). ECM lattice spacing sweep (expect U-shape vs spacing with same optimum).
13. Stats. At least 6 spheroids per size per condition; at least 2 batches. Mixed-effects: response by size and RF, batch as random effect. Alpha 0.05.
14. Wording guardrails. Say “near-unity exciton transfer within antenna complexes.” Treat THz micro-tubule claims as reported/contested; if relevant, they act as brief “kicks,” not computing.
15. Falsification. Any of: no 150 um peak, no phase-specific RF effect, resource-gap index ≤ 0 , or causal knobs fail to shift/attenuate $\rightarrow$ hypothesis falsified.