Prime Radiant Innovations

Applied Physics Consulting

PRIMERADIANTINNOVATIONS.COM

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Toronto, Canada
Remote-friendly

We help technical teams and startups de-risk physics-heavy designs by turning intuition into simulation-backed decisions—without hiring a full-time specialist.

What We Do

We work with teams tackling technically ambiguous or high-risk engineering problems—especially where physics, computation, and design intersect.

Our role is to come in **early, briefly, and surgically**: clarify what will work, what won't, and what to do next, so teams can move forward with confidence.

We specialize in short, clearly scoped engagements that unblock stalled R&D, validate designs before fabrication, and reduce costly iteration.

Typical Problems We Help With

- "We think this should work, but we're not confident enough to commit."
- "Our simulations exist, but we don't fully trust them."
- "We need senior physics or modeling insight, but not a full-time hire."
- "This problem spans multiple domains and keeps falling between roles."
- "We're about to spend real money and want independent technical validation."

Core Services

Technical Feasibility & Risk Assessment

2–4 weeks · Fixed scope

- Evaluate feasibility of a proposed concept or design
- Identify dominant constraints and failure modes
- Perform targeted modeling or simulations
- Deliver a clear written recommendation suitable for leadership or investors

Design Validation & Optimization Sprint

3–6 weeks · Fixed scope

- Simulation-based validation of existing designs
- Sensitivity analysis and parameter trade studies
- Design refinement and optimization
- Actionable next steps for fabrication or implementation

Specialist R&D Support (Time-Boxed)

1–2 days/week · Monthly retainer

- Embedded technical support during critical phases
- Modeling, analysis, or code development
- Knowledge transfer to internal teams

Code & Model Audit *1–3 weeks · Fixed scope*

- Review of assumptions, numerics, and implementation
- Identification of errors, fragility, or over-complexity
- Recommendations for improvement or refactoring

How We Work

- Short engagements with clear deliverables
- Outcome-focused: clarity and confidence over perfection
- Low overhead for clients—we work independently and integrate cleanly
- Collaborative, not disruptive, to existing teams

We typically work on a fixed-fee basis to keep incentives aligned and decision-making simple.

Background

We're engineering physicists, applied mathematicians, and R&D engineers with experience spanning physics-driven product development, computational modeling, and interdisciplinary research environments.

Detailed CVs and selected project examples are available upon request.

Let's Talk

If you're facing a technically ambiguous decision, stalled design, or upcoming commitment where confidence matters, we're happy to start with a short conversation.