LICENSING OPPORTUNITY: NON-DESTRUCTIVE CONCRETE QUALITY TESTING SYSTEM

DESCRIPTION

Problem

Current methods to test concrete, like chemical testing or microscopy, are slow and destructive. Further they will need expert operators and some only test certain parts and can't detect water without separate tests. This invention solves said problems by offering a fast, one-step, non-destructive testing method that sees everything, including water, in one go. It does not need sample prep or damage the material, making testing easier and more accurate.

Invention

This invention uses prompt gamma neutron activation analysis (PGAA) to analyze materials, especially concrete, without damaging them. It fires neutrons at the sample, which then emits gamma rays. By measuring those rays, the material's makeup can be identified, including cement, sand, aggregates, and water. It can even detect hydrogen, making it possible to find water content directly. The system works non-destructively and can be automated for real-time quality checks.

BENEFITS

Potential Commercial Applications

- Can evaluate existing concrete structures (e.g., bridges or buildings) without drilling or cutting samples.
- Identify types of concrete or metal in recycling flows.
- Can assist with identifying types of concrete or metal in recycling flows.
- Can confirm materials used in production to ensure consistent quality.

Competitive Advantage

- Reduces the need for destructive testing, speeding up inspections and saving labor costs.
- Captures key components without extra tests, improving reliability.
- Useful across sectors like construction, recyling, and manufacturing, boosting potential markets.

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