



(1)変質コンクリートの調製
 事故時温度解析
 変質コンクリート試料の調製

(2)核種移行特性の評価
 微細構造評価
 化学状態変化
 拡散挙動・収脱着挙動

(3)廃棄物管理シナリオ評価
 廃棄物特性・物量評価
 廃棄体の性状評価
 廃棄物管理シナリオ構築・評価

Figure 1 illustrates the research framework, organized into three main sections: (1) Variable Concrete Setting, (2) Nucleation Migration Characteristics Evaluation, and (3) Waste Management Scenario Evaluation. Each section details specific tasks and their interrelationships.

- Section (1): Variable Concrete Setting**
 - Tasks: 事故時温度解析 (Accident Temperature Analysis), 変質コンクリート試料の調製 (Preparation of Variable Concrete Samples).
 - Flow: 事故時温度解析 leads to 解析の試行 (Analysis Trial), which leads to 温度分布評価 (Temperature Distribution Evaluation), which leads to 詳細計算 (Detailed Calculation).
 - Relationship: 変質コンクリート試料の調製 leads to 模擬供試体調製 (Mock Specimen Preparation), which leads to 温度分布を考慮した試料調製 (Sample Preparation Considering Temperature Distribution).
- Section (2): Nucleation Migration Characteristics Evaluation**
 - Tasks: 微細構造評価 (Microstructure Evaluation), 化学状態変化 (Chemical State Change), 拡散挙動・収脱着挙動 (Diffusion Behavior/Adsorption/Desorption Behavior).
 - Flow: 微細構造評価 leads to 非破壊CT-XRD 練成分析の準備 (Preparation for Non-destructive CT-XRD Analysis), which leads to SPring 8によるCT-XRD分析 (CT-XRD Analysis using SPring 8), which leads to 変質箇所観察 結晶物質同定 (Observation of Variable Locations, Crystal Substance Identification).
 - Relationship: 化学状態変化 leads to 健全試料での実験 (Experiment with Sound Samples), which leads to 模擬変質試料での実験 (Experiment with Mock Variable Samples), which leads to 核種の化学状態と移行挙動との関係を解明 (Clarification of the Relationship between Nucleation Chemical State and Migration Behavior).
- Section (3): Waste Management Scenario Evaluation**
 - Tasks: 廃棄物特性・物量評価 (Waste Characteristics/Quantity Evaluation), 廃棄体の性状評価 (Evaluation of Waste Body Characteristics), 廃棄物管理シナリオ構築・評価 (Waste Management Scenario Construction/Evaluation).
 - Flow: 廃棄物特性・物量評価 leads to 物量の推計 (Quantity Estimation), which leads to 濃度分布・経時変化算出 (Concentration Distribution/Temporal Change Calculation), which leads to 廃棄物量の算出 (Calculation of Waste Quantity).
 - Relationship: 廃棄体の性状評価 leads to 浸出モデル作成 (Leachate Model Creation), which leads to 廃棄体の仕様・浸出挙動の検討 (Consideration of Waste Body Specifications/Leachate Behavior), which leads to 廃棄体の性状・数量評価 (Evaluation of Waste Body Characteristics/Quantity).
 - Relationship: 廃棄物管理シナリオ構築・評価 leads to 意思決定木作成 (Decision Tree Creation), which leads to シナリオ抽出 被ばくリスク計算モデル構築 (Scenario Extraction, Dose/Risk Calculation Model Construction), which leads to 廃棄物管理シナリオ評価 (Waste Management Scenario Evaluation).