

マテリアル先端リサーチインフラ利用報告書

ARIM User's Report

[Release : 2025.06.10] [Update : 2025.05.23]

課題データ / Project Data

課題番号 Project Issue Number	24UT0251
利用課題名 Title	地球資源を考慮したサーキュラーエコノミーに資する物質循環型建造物の構築
利用した実施機関 Support Institute	東京大学 / Tokyo Univ.
機関外・機関内の利用 External or Internal Use	内部利用 (ARIM事業参画者以外) / Internal Use (by non ARIM members)
ARIM半導体基盤PF 関連課題 Related to ARIM-SETI	指定なし / No Designation
横断技術領域 Cross-Technology Area	計測・分析/Advanced Characterization
重要技術領域 Important Technology Area	マテリアルの高度循環のための技術/Advanced materials recycling technologies 高度なデバイス機能の発現を可能とするマテリアル/Materials allowing high-level device functions to be performed
キーワード Keywords	イオンミリング / Ion milling, 高品質プロセス材料/技術 / High quality process materials/technique, 易循環型材料設計技術 / Recycling-friendly material design technology

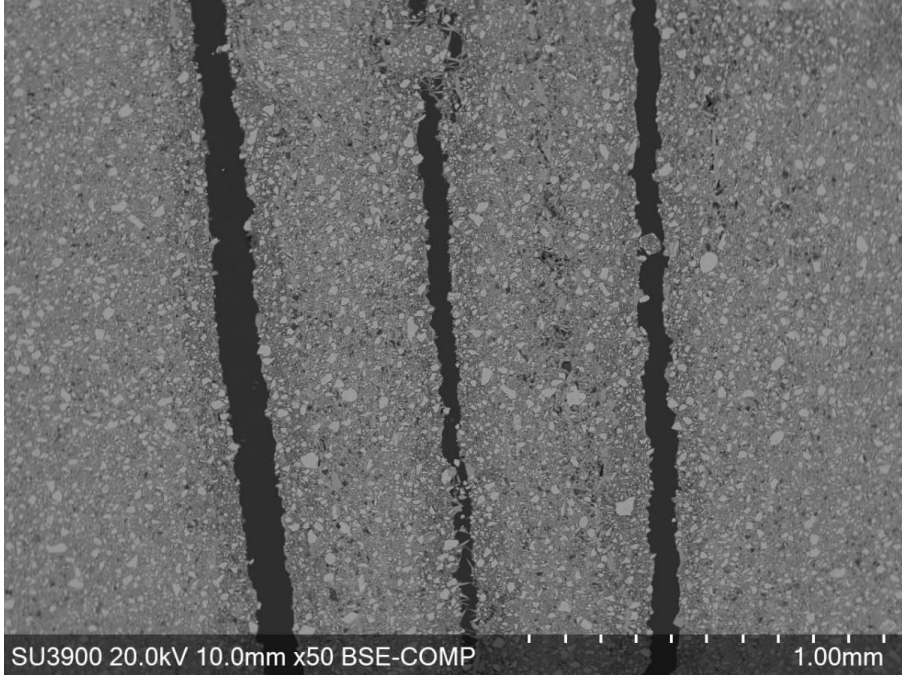
利用者と利用形態 / User and Support Type

利用者名 (課題申請者) User Name (Project Applicant)	王 佃超
所属名 Affiliation	東京大学大学院工学部研究科建築学専攻
共同利用者氏名 Names of Collaborators Excluding Supporters in the Hub and Spoke Institutes	
ARIM実施機関支援担当者 Names of Supporters in the Hub and Spoke Institutes	
利用形態 Support Type	機器利用/Equipment Utilization, 機器利用/Equipment Utilization

利用した主な設備 / Equipment Used in This Project

利用した主な設備 Equipment ID & Name	UT-153 : クロスセクションポリッシャー (CP)
---------------------------------	------------------------------

報告書データ / Report

<p>概要（目的・用途・実施内容） Abstract (Aim, Use Applications and Contents)</p>	<p>The main objective is to develop multifunctional cement-based materials. We entrusted your institution with the polishing of two samples.</p>
<p>実験 Experimental</p>	<p>We primarily prepared SEM sample cross-sections with SM-09010 and SM-09020.</p>
<p>結果と考察 Results and Discussion</p>	<p>We observed the layered structure of the sample, examined the distribution of the products, and identified the elemental distribution of the products. To achieve a more detailed understanding of the material's microstructure, we conducted SEM analysis on the cross-sections of the samples. Through this analysis, we were able to clearly observe the presence of a layered structure, which provides valuable insights into the internal composition and phase separation of the material. By analyzing the morphology and spatial distribution of different phases, we could assess the uniformity and integrity of the material's microstructure. Additionally, we carefully examined the distribution of the reaction products within the sample. This allowed us to understand how different phases formed and interacted under specific processing conditions. The presence and arrangement of these phases are crucial for evaluating the performance and functionality of the material, especially in applications requiring high durability and mechanical stability. Furthermore, we performed elemental mapping to identify the distribution of key elements in the sample. This helped us determine the composition of the reaction products and assess their homogeneity. The elemental analysis provided essential data for optimizing the material's formulation, ensuring that the designed composition meets the intended multifunctional properties. Overall, these observations contribute to the ongoing development of advanced cement-based materials with enhanced performance characteristics.</p>
<p>図・表・数式 1 Figures, Tables and Equations 1</p>	 <p style="text-align: center;">Lamellar figure</p>
<p>その他・特記事項（参考文献・謝辞等） Remarks(References and Acknowledgements)</p>	<p>No</p>

成果発表・成果利用 / Publication and Patents

DOI (論文・プロシーディング) DOI (Publication and Proceedings)	
口頭発表、ポスター発表 および、その他の論文 Oral Presentations etc.	
特許出願件数 Number of Patent Applications	0件
特許登録件数 Number of Registered Patents	0件