

The Łukasiewicz Research Centre - Ceramics and Building Material Institute (ICiMB)

Four cities: Gliwice; Kraków; Opole; Warszawa

The Institute is active in the following areas:

- ✓ ceramics and composites
- ✓ decoration materials
- ✓ cement and cement admixtures
- ✓ concrete, mortar and aggregate
- ✓ gypsum binders
- ✓ building chemicals



- ✓ glass
- ✓ refractory materials
- ✓ biomaterials
- ✓ environmental engineering
- ✓ laboratory tests
- ✓ experimental and low-volume production
- ✓ certification and standardization



We offer full research and implementation cycle:

**SCIENCE → R&D → INNOVATIONS → CERTIFICATION →
MANUFACTURE AND IMPLEMENTATION**

1

Mail: lukasz.lancucki@icimb.lukasiewicz.gov.pl WWW: www.icimb.lukasiewicz.gov.pl



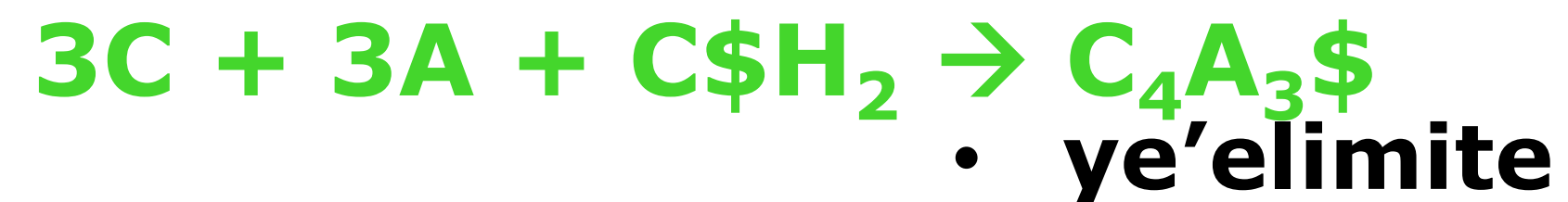
Łukasiewicz
Institute
of Ceramics
and Building
Materials

„Combining conventional and innovative construction materials, products and techniques for sustainable and beautiful buildings”

- ✓ **Subject of the project:** Ettringite based cements
- ✓ **Innovative aspects:** microwave irradiation as direct Ettringite decomposer
- ✓ **Expected results:** fast binding recyclable building materials

➤ Reactions used in Ettringite-based soil stabilization (EBS)

- Clays as source of (Al_2O_3) - **A**
- Limestone - **C**
- Gypsum - $C\$H_2$



- ettringite



- gibbsite-like gel

➤ Microwave irradiation (70-100 °C)



700 cm³/mol 300 cm³/mol

➤ $C_4A\$_3H_{12}$ and $C\$H_2$ ready for rehydration



We offer / we seek

➤ Areas of expertise ICiMB brings to the project

- **Specialized Competence for This Topic**
- **Material Science & Technologies**
- **Laboratory & Industrial Capabilities**

➤ Contribution Proposed by ICiMB to the Project

- **Technology & Material Development**
- **Demonstration Activities**
- **Scientific & Technical Work**
- **Implementation Support**

➤ Partners Sought

- **Industrial Partners**
- **Research & Academic Partners**
- **Demonstration & Deployment Partners**