

GraphenePioneer

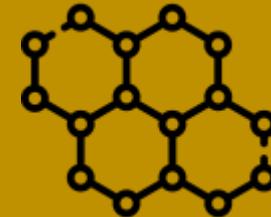
Making climate action concrete



Michel de Ruiter Founder

Winner global graphene call

GraphenePioneer has won the first *Global Graphene Call* which aims to drive forward business projects relating to graphene. GraphenePioneer sets out to impact on society with the production of as yet unknown graphene-based materials. CIC nanoGUNE



finalist Global Climate Launchpad

GraphenePioneer is developing ways to use graphene in existing production processes. Graphene in concrete is possible due to the “graphene machine”, a device that can be used along side standard production of concrete and other composite materials. Climatelaunchpad



finalist Entrepreneurship World Cup EWC

finalist Innovation world cup BIMworld

Runner Up Go Global Awards goglobalawards

Problem:

Climate change. We want to address two main problems, resources and energy, and offer a solution that has a far broader impact.

1st problem: Concrete

Most used material after water

8% of global CO2 emission

Sand shortage

Coastal erosion

Topsoil erosion

Urban heat islands

Dust pollution



2nd problem: Energy

>60% household use is to heat space

Growing demand

Over 50% fossil energy

CO2 emissions

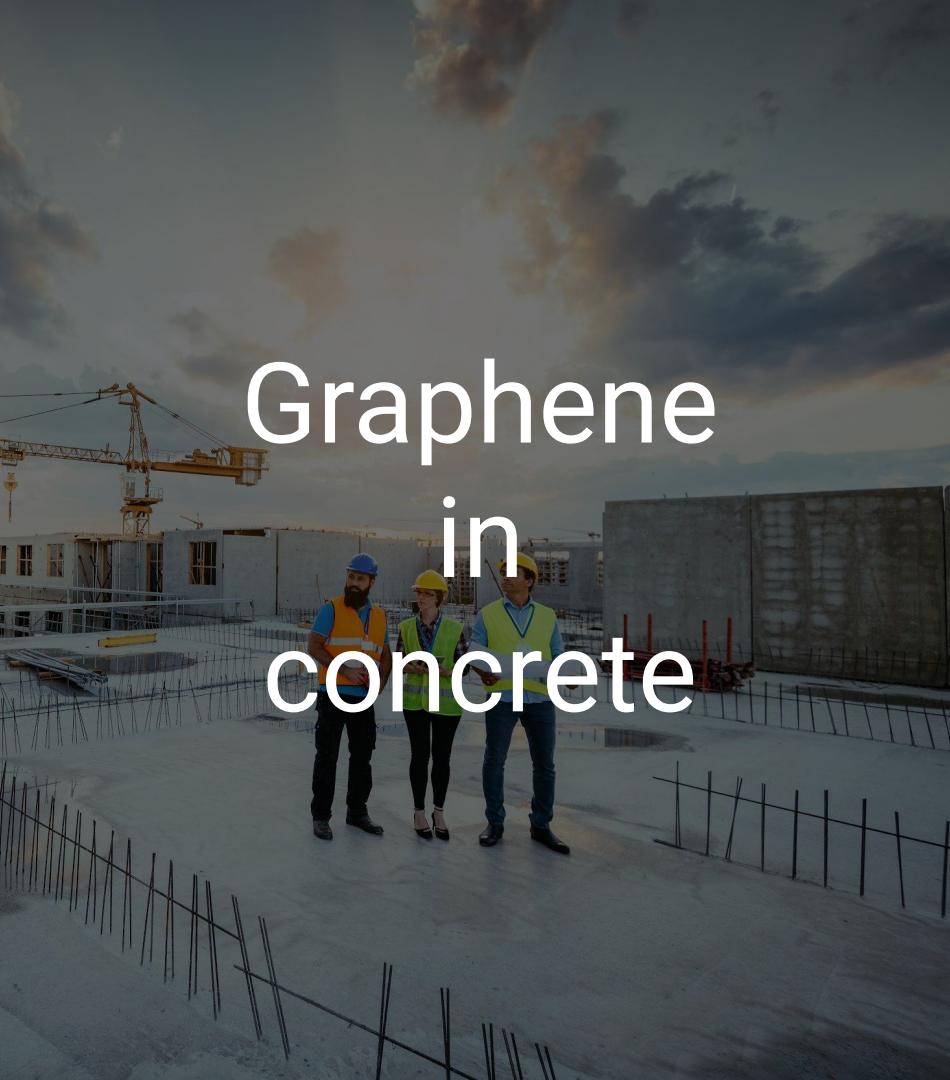
Climate change drives energy use.





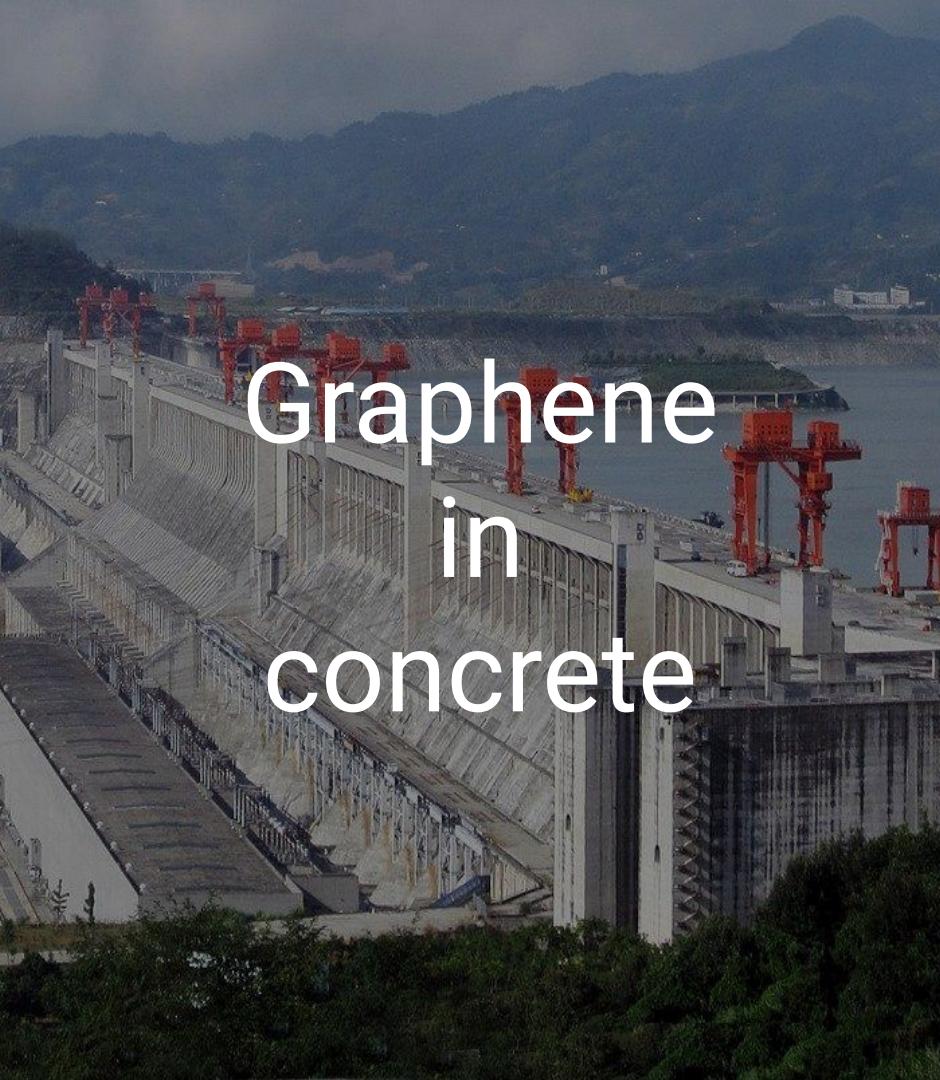
Graphene in concrete

Stronger = less

A photograph of a construction site at dusk or dawn. Three workers in safety vests and hard hats stand on a concrete slab. In the background, a large concrete wall is under construction, and a yellow construction crane is visible against a dramatic, cloudy sky.

Graphene in concrete

Can heat buildings!



Graphene
in
concrete

Stores energy!

How does reinforcement work?

Mixing graphene sheets in concrete.

The graphene flakes attract water and cement.

Accelerates curing

Prevents cracks from curing and stress.

2 μ m

How does energy saving work?

Mixing a blend of graphene and carbon materials in concrete or plaster.

Applying this mix as layer on concrete wall.

5-30% energy savings as passive system, works complementary with other energy saving measures.

Can be used as active heating.

TAM, SAM and SOM for renovation market energy saving only:

TAM	SAM	SOM
350M houses (EU & US); potential market size: €350 billion.	30% of TAM indicating a realistically targetable market of €105 billion for energy-efficient renovations.	1% of SAM representing a potential capture of €1.05 billion in the energy-efficient renovation market.

We need:

- Funding of € 250,000 for real life product validation
- Leading customers
- Partnerships
- Network
- Climate stakeholders
- Practical support
- Grants
- Events exposure
- Collaborations
- Questions

Letters of intent with:

Block Solutions (200,000 houses)

More in progress

TGN

Gietmooi

Microbrain

CB scientific

International recognised graphene expertise.

An international team of business
and leading material experts along
with research institutes and
universities are involved.

International recognised graphene expertise.



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business advisor



Elvira de Rooij
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