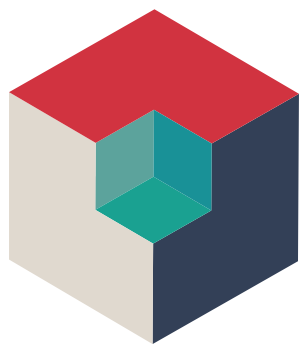


Crystal Growth *Simulation* *Software*

Generic Monte Carlo **crystal-growth software** for simulation of crystal habit and nanoscale surface topography



CrystalGrower

www.crystalgrower.org

Want to understand how your crystals grow?

Understanding how crystals grow at the molecular scale is ***the key to controlling crystal performance and functionality.***

With the advent of scanning-probe microscopies the molecular details of surface topography are now accessible and, ***when coupled with the crystal habit, provide a wealth of experimental information that leads to this understanding.*** Our software is designed to help extract this information and ***maximise your knowledge of how your crystal system is behaving*** and, thereby, tailor crystallisation conditions.





A simple Monte Carlo methodology

We have developed a Monte Carlo and visualisation software, CrystalGrower, that is ***able to simultaneously simulate both crystal habit and nanoscale surface topography***. This is achieved for any crystal structure under non-equilibrium conditions, with the ability to add growth modifiers and to incorporate dislocations and defects. ***The original concept is described in Nature, 2017, 544, 456–459 and Chem. Sci., 2021, 12, 1126–1146***

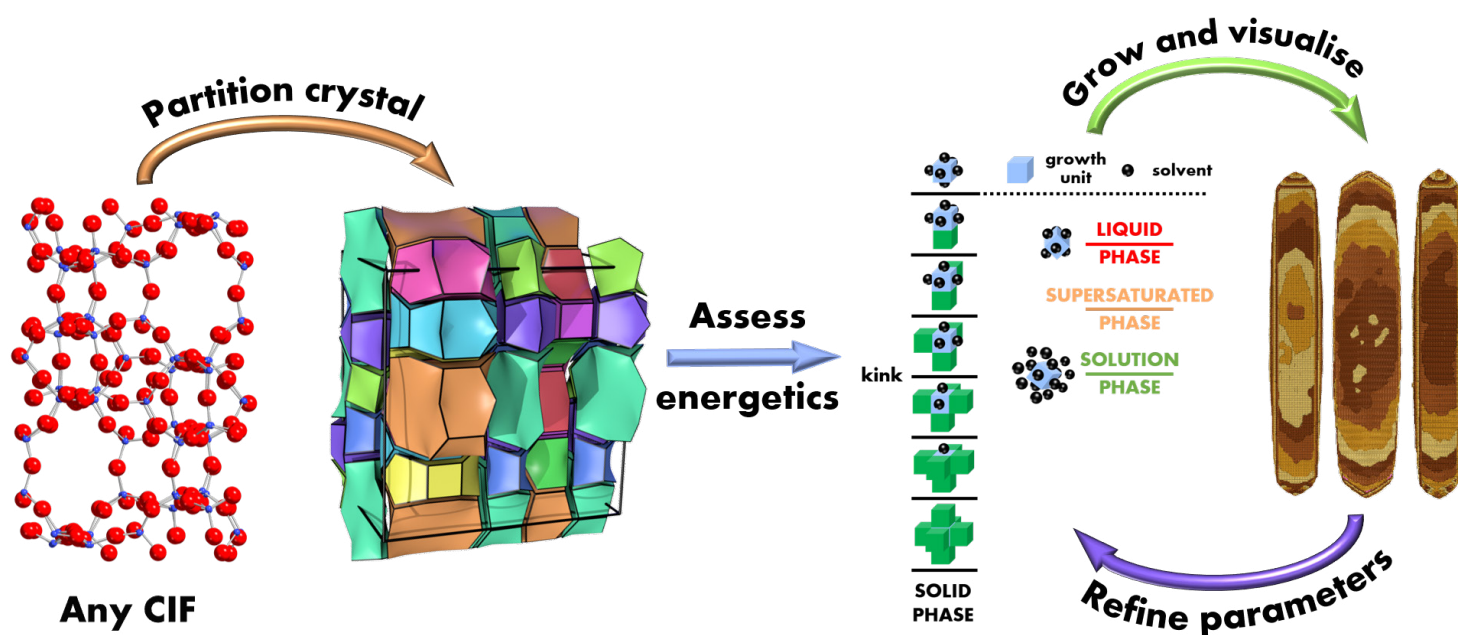


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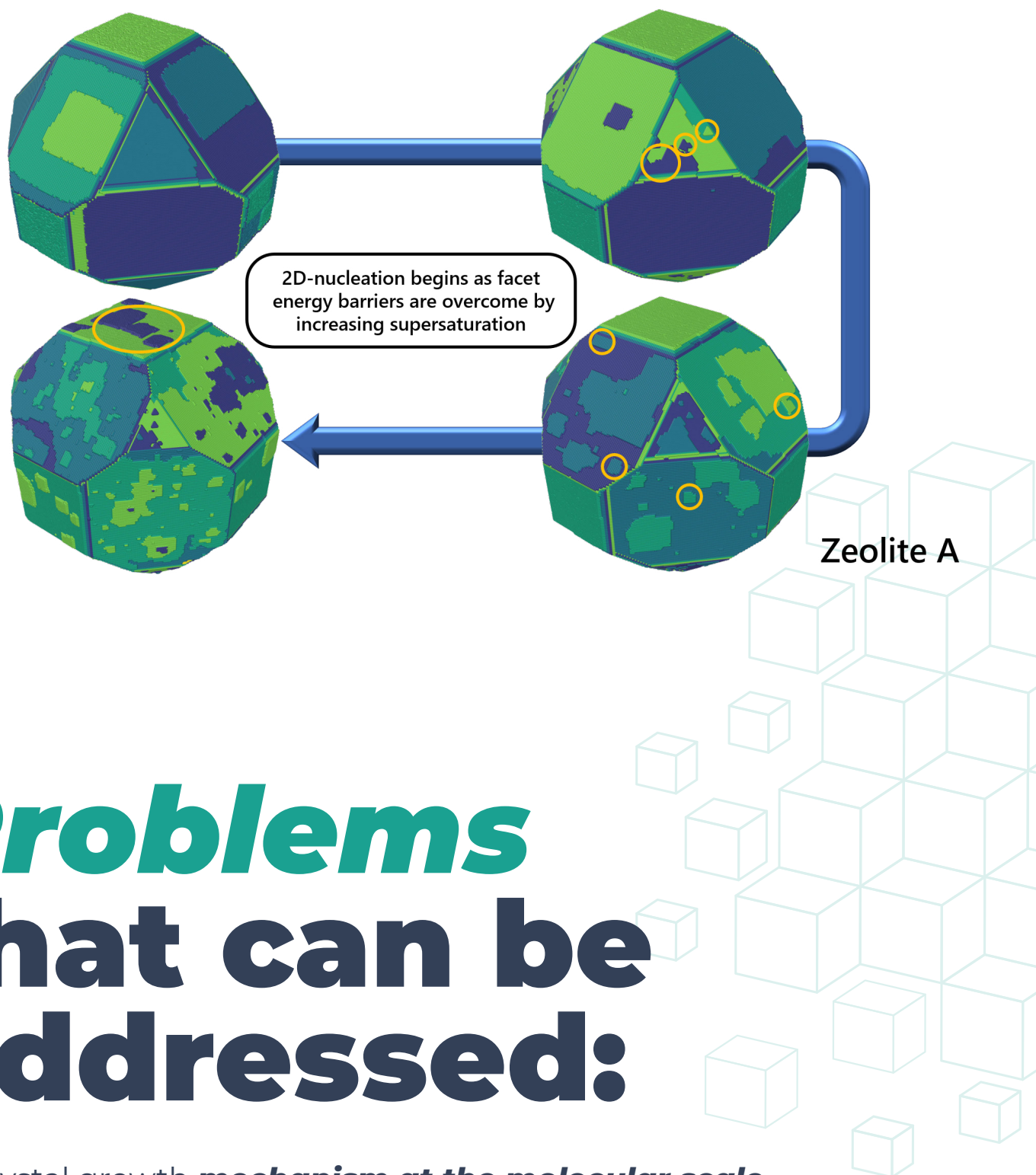
Types of Materials:

Whether your interest is molecular crystals, co-crystals, ionic crystals, minerals, framework materials, metals or other crystal systems –

CrystalGrower is the tool for you!



CrystalGrower



Problems **that can be addressed:**

- ✓ Crystal growth ***mechanism at the molecular scale***
- ✓ Crystal habit and surface topography with ***nanoscale precision***
- ✓ Effect of supersaturation, temperature and ***solution speciation***
- ✓ Effect of ***growth modifiers***
- ✓ ***Screw dislocations***, point defects and ***intergrowths***

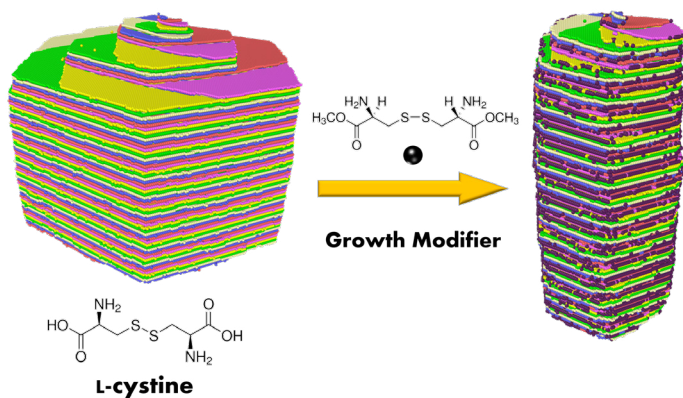


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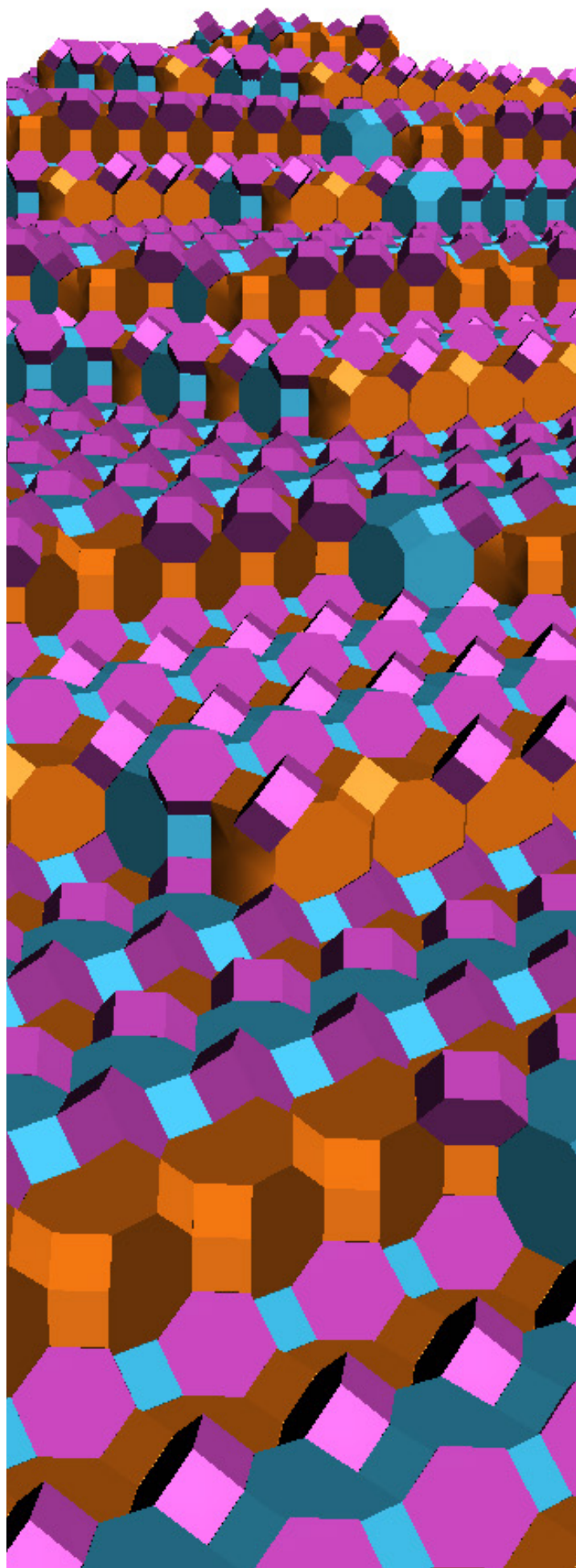


Ease of use:

We provide a ***user-friendly interface*** coupled with ***extensive video tutorials*** that are designed to make the tool ***accessible for all users***, from bench-top experimentalists to theoreticians. Our goal is not only to deliver a better understanding of the crystal-growth mechanism but also to ***aid in the design of new and improved experimental methodologies*** that can be trialled in the laboratory.



CrystalGrower





A secure *platform:*

The software runs entirely on your own computers (laptop or super-computer) with ***no web interface in order to provide a safe and secure environment*** for your sensitive information.

Who does it *benefit?*

Industrialists who want to ***understand, control and modify crystallisation systems***

Academics, PhD students and post-docs with an interest in the nanoscopic details of ***how ordered matter is formed***

Undergraduates who are studying the chemistry and physics of crystallisation

Educators interested to ***teach young people*** the importance and beauty of crystallisation

What's the *Cost?*

Free to academics and educators, commercial users please contact ***team@crystalgrower.org***

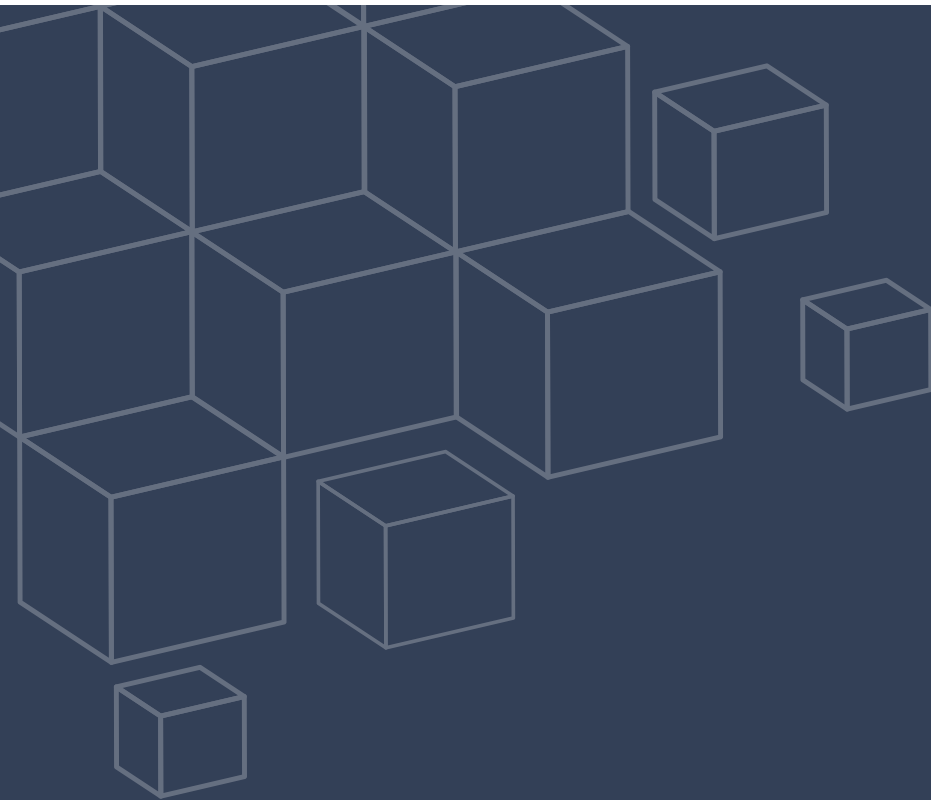


CrystalGrower



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www.crystalgrower.org



Contact *details:*



Website and software download: crystalgrower.org



Youtube: www.youtube.com/channel/CrystalGrower



Twitter: [@crystalgrowerx](https://twitter.com/crystalgrowerx)



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