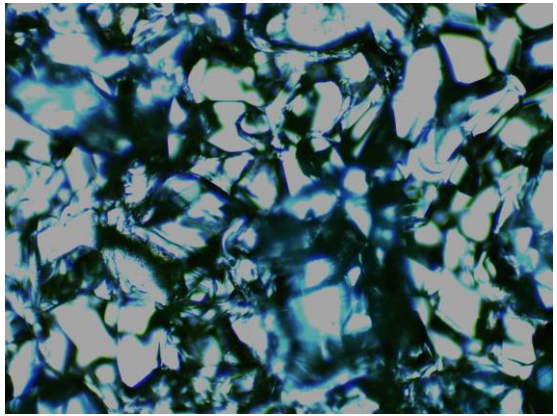
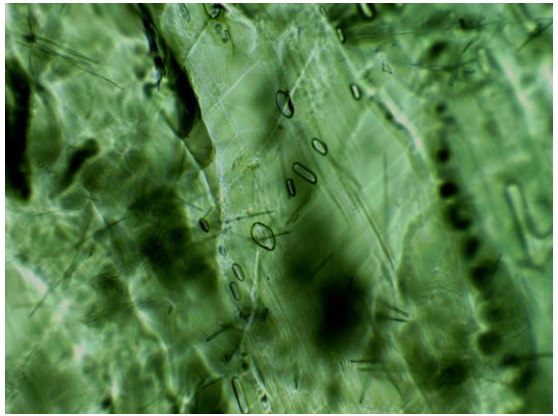
5. Frosty Patterns

Reporter: Team Bobek-Almaty
Opponent: Team Romania Starry Night
Reviewer: Team Romania Starry Night

Problem’s task

Patterns similar to **frost** on a winter window are obtained if **magnesium sulphate in solution** is deposited on a **glass surface**. Investigate this effect.





Reporter Summary

Strong points

- Pictures with the phases of crystallization
- A lot of pictures, describing the result
- Clarifying the steps of the experiment

Weak points

- Did not explain the crystallization process entirely
- Did not measure the amount of substance that was put on the glass surface
- Did not vary the solvent and solute.
- Did not change the medium of crystallization
- Did not characterize the crystal shape
- Did not mention the time of crystallization
- Not good time usage

Opponent Summary

Strong points

- Relevant questions that completed the reporter's affirmations
- Mentioned the lack of explanation on the crystallization process

Weak points

- Broad points
- Repetitive observations
- Did not mention the lack of characterization of crystals
- Did not present their opinion on their unanswered questions

Clashes during the fight

- Opp: Super-saturated solutions
  Rep:Would not dissolve (50g)
  Rew: We agree with the opponent

- Opp: Using other salts
  Rep: No response
  Rew: We agree with the opponent

- Opp: Why are the crystals on the edge more obvious
  Rep: No response
  Rew: Because of the tension

Thank you for your attention

Clarifying questions for the reporter and opponent

Reporter:

- Did you vary the substances used?
- What do you think would happen if you would vary the concentration
- Why did you use these salts? Why sulphates only?
- Do you know other sulphats that crystalize in frosty patterns?
- How did you characterize the crystals?
- Do you think that the humidity in the air influenced the crystallization? How?
- Can you do something in order to increase the speed of crystallization? .... But what would happen if the solutions would be put in the refrigerator?

Opponent:

What’s your position on the crystallization