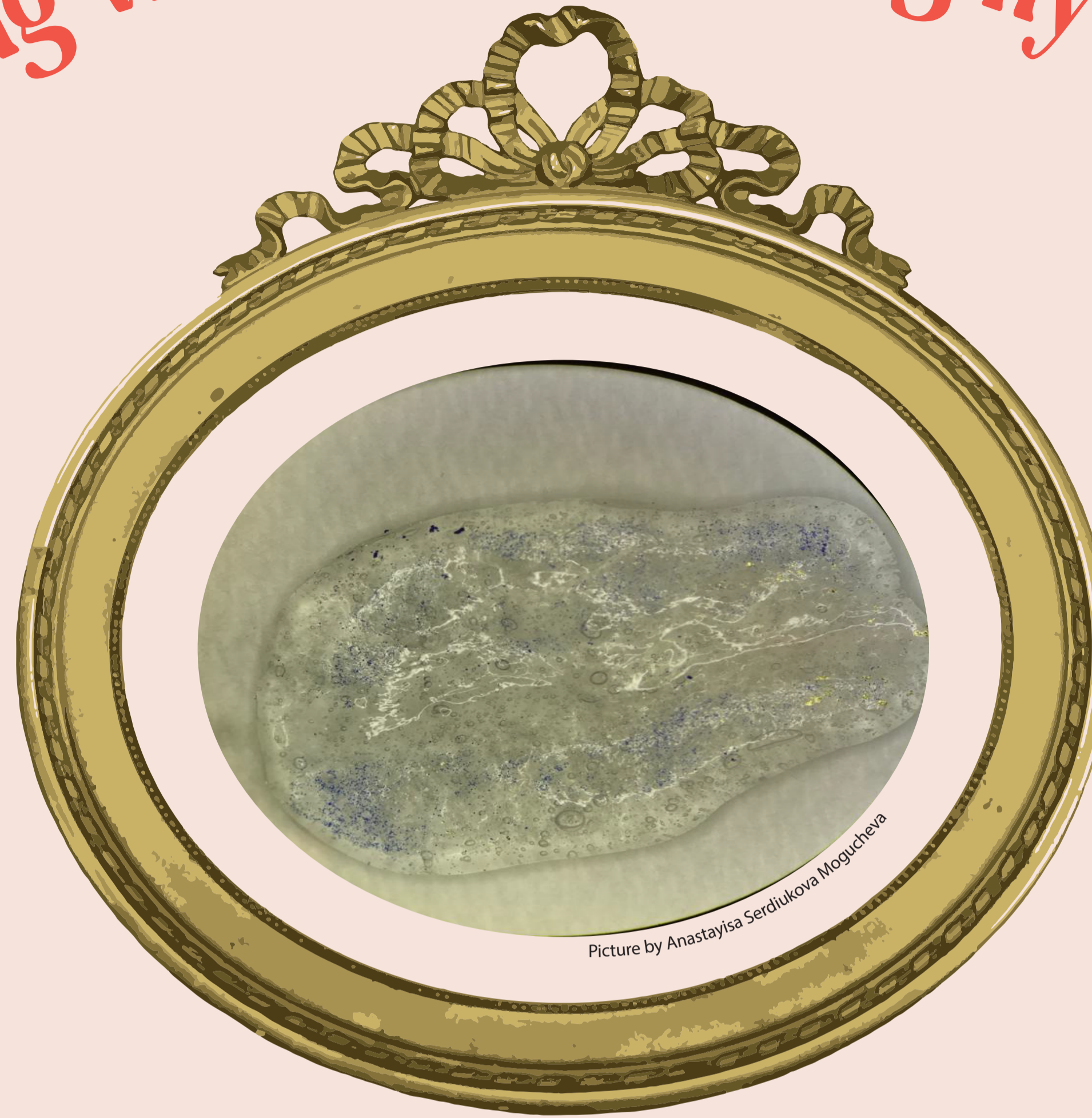


Cleaning water gilding using hydrogels



Problem

- Conservation of gilded objects is not often studied.
- Cleaning water-gilding is normally done with solvents, this is not sustainable, and it is harmful for the conservator.
- Water works as a solvent for water-gilded surfaces.



Aim

Finding a suitable solution for cleaning water-gilded surfaces



Research questions

- Is it possible to use water to clean water gilding?
- How does the water diffusion affect the water-gilding?
- How can we control the diffusion of the gel?
- How is the cleaning affected when using different gel formulas?

SOLUTION

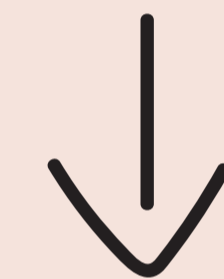
- Use hydrogels: Agar and PVABorax
- Control the diffusion of the water in the gels
- Try different recipes to find the ideal solution

Main bibliography

- **Sawicki, Malgorzata.** Heritage wood, investigation, and conservation of art on wood. Malgorzata Sawicki Austin Nevin. An Investigation of the Feasibility of the Use of Gels and Emulsions in Cleaning of Gilded Wooden Surfaces Part A: Removal of Brass-Based Overpainting. s.l.: Springer, 2019
- **Auffret, Stéphanie y Beall, Sydney.** Cleaning of wooden gilded surfaces. Los Angeles: The Getty conservation institute, 2018
- **Angelova, Lora V.** Gels From Borate-Crosslinked Partially Hydrolyzed Poly(Vinyl Acetate)s: Characterization Of Physical And Chemical Properties And Applications In Art Conservation. PhD Thesis. USA: Georgetown University, 2013

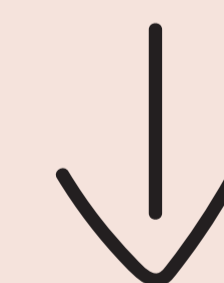
Experiment

- Test Agar, from 2% to 10%
- Test Borax and find the perfect recipe
- Different proportions of chelating agents
- Test residue with SEM
- Test the surface after the gels



Conclusions

- Borax does NOT leave any residue
- Agar leaves microparticles
- Each frame has its own preferences
- The diffusion of the gel is controlled by the type of gel and the percentage



Further research

- Different techniques for the cleaning of water-gilding surfaces
- Trying to clean different gilding techniques i.e brass