



# i9MASKS

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## Manufacturing process of PDMS facial masks



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### Introduction

- Nowadays, the acute respiratory syndrome (SARS-COV-2) that causes Covid-19 has become a global pandemic [1].
- Have been taken measures to slow down the spread of the virus, including social distance and the use of personal protective equipment (PPE) [1] [2].
- Masks became one of the indispensable pieces during the pandemic, but the current models hinder interpersonal communication, cause environmental problems, additionally they cause irritation and skin discomfort.



### Materials and Methods



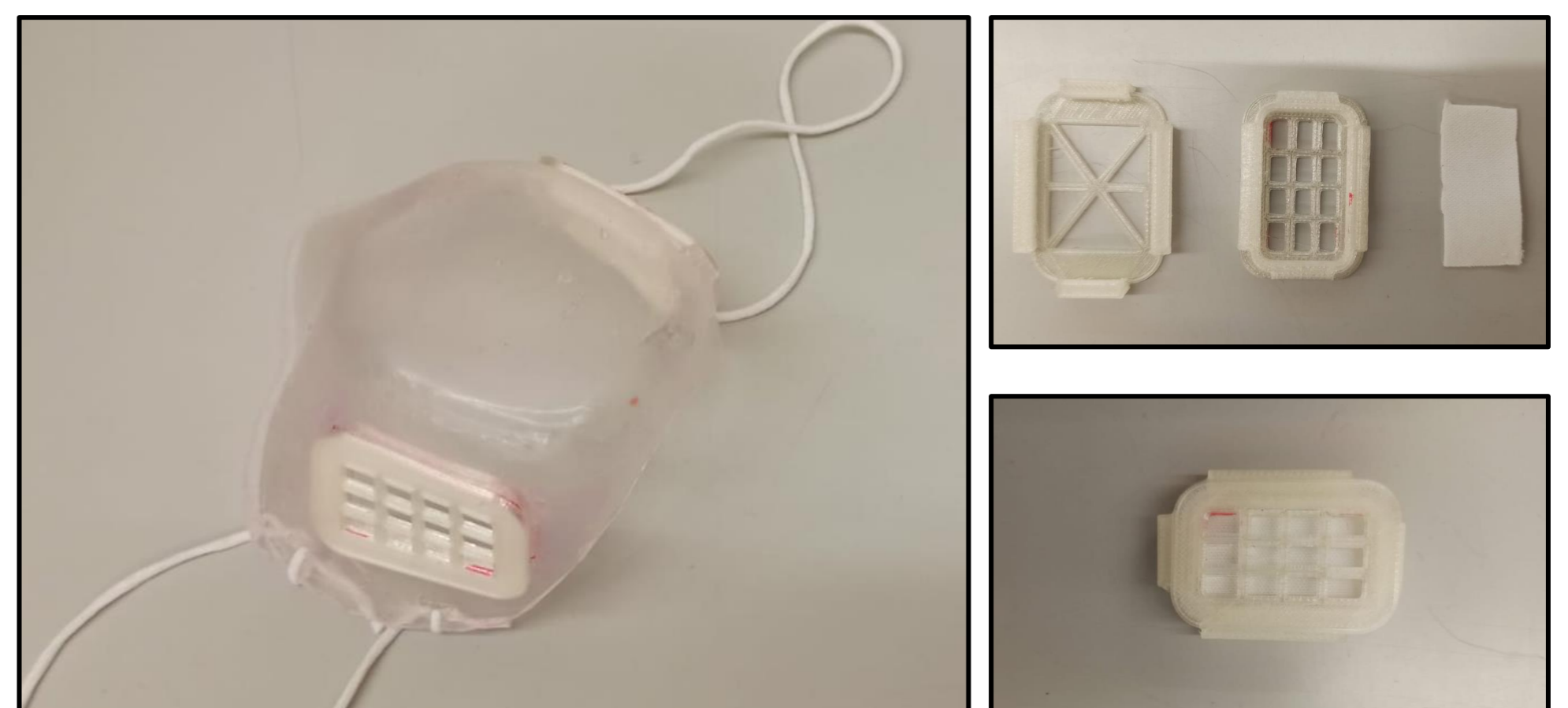
### Results e Discussion

The final models were obtained using molds manufactured in polysmooth and polyurethane resin. The obtained models seem to be promising, however is possible to verify:

- The polysmooth mold did not present the best surface finishing, so the model decreases the optical transparency;
- The PU resin mold presented a better surface finish, causing a model with higher transparency than the polysmooth.

### Future works

- Improve the surface finish of the polyurethane mold (polishing);
- Modify the surface from hydrophobic to hydrophilic;
- Incorporate different types of filters.



### References

- [1] Tarfaoui, M., Nachtane, M., Goda, I. *et al.* Additive manufacturing in fighting against novel coronavirus COVID-19. *Int J Adv Manuf Technol* **110**, 2913–2927 (2020).
- [2] Chao, F.-L. (2020). *Face mask designs following novel Coronavirus*. *Journal of Public Health Research*, *9*(1). doi:10.4081/jphr.2020.1770