

## Eggshell waste valorization into CaO/CaCO<sub>3</sub> solid base catalysts

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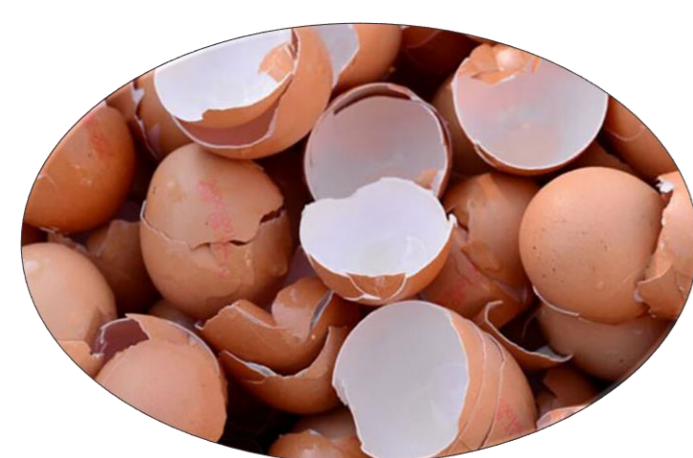
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### INTRODUCTION & AIM

7.2 million tons of hen eggshell waste annually produced



Transformation into useful materials



The aim of present work is the valorization of eggshell waste to obtain CaO/CaCO<sub>3</sub> materials with application as heterogeneous catalysts

### METHODS



Washing and inner membrane removing

Drying

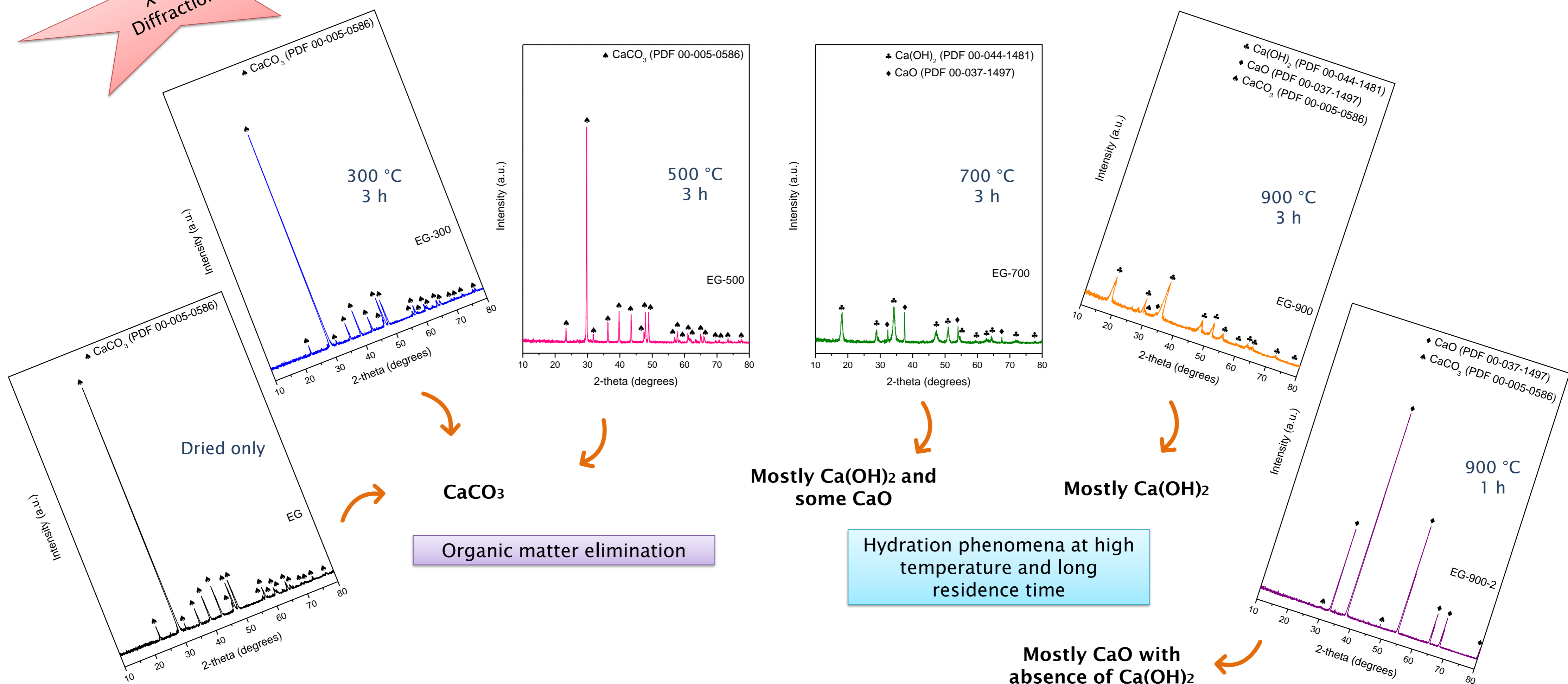
80 °C  
24 h

Calcination

300-900 °C  
1-3 h

### RESULTS & DISCUSSION

X-Ray Diffraction



### CONCLUSION

Physicochemical changes observed were correlated with the thermal treatments applied, evidencing the transformation from CaCO<sub>3</sub> to CaO and also the formation of Ca(OH)<sub>2</sub>. Considering this preliminary results, prepared solids could be useful as base catalysts in different heterogeneous reactions.

### FUTURE WORK

Samples are being thoroughly characterized by means of a variety of techniques to fully understand its physicochemical properties. Dried eggshell will also be submitted to high-energy ball milling to achieve polymorphic transformations and/or solid-state reactions.