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**Synthesis and characterization of CaCO₃/CaO from chicken eggshell with
various calcination times**

ABSTRACT. This research aimed to examine the phase, morphology and elemental changes in calcium carbonate derived from chicken eggshell with variations in calcination times of 60, 90 and 120 min. Eggshell powder was comminuted through a ball mill process, operated for 10 h. Morphological testing was done using SEM-EDX and the phase identification using XRD. The results showed that the sample subjected to 90-min sintering had the highest degree of crystallinity. The 60-min sintered specimen had the smallest grain size of 14.6 nm, and the largest was 32.2 nm. The eggshell nanopowder sintered for 60 min had the lowest element content, while that sintered for 120 min had the highest. A simple route to produce CaCO₃ and CaO from chicken eggshells was successfully achieved using a ball mill process.

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