

## CERAMIC AND COLLOIDAL PROCESSING - EXERCISES

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### Exercises 4

1. What are the different nucleation mechanisms possible in a stirred tank reactor?
2. What is the significance of the critical size of a seed/embryo of a crystal in a precipitation system??
3. For the precipitation of a calcite powder at room temperature (25 ° C) calculate the critical size for 2 different supersaturation ratios;  $SR = 2.0$  and  $7.76$ ; discuss the validity of the results.  
( $V_m = 6.13 \times 10^{-29} \text{ m}^3 / \text{molecule}$ ,  $\gamma = 0.127 \text{ N / m}^2$   $\beta V = 4\pi / 3$  and  $\beta A = 4\pi$ ).
4. What are the different methods for producing a powder from gaseous reactants? Give a typical example.
- 5.- Give three methods of synthesis of a ceramic powder and give advantages and disadvantages of these methods.