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Chemical Mechanism for Fluorapatite Dissolution in Acids

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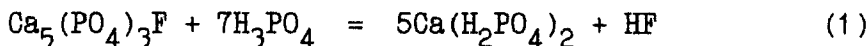
CHEMICAL MECHANISM FOR FLUORAPATITE DISSOLUTION IN ACIDS

SERGEY V. DOROZHKIN

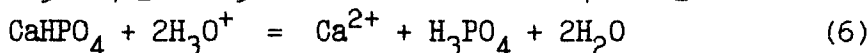
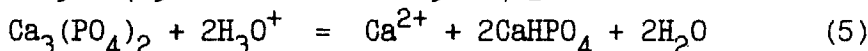
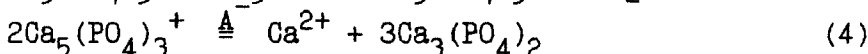
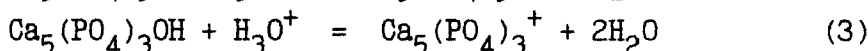
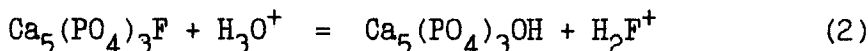
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Abstract New chemical mechanism for acidic dissolution
 of fluorapatite is discussed.

Modern level of knowledge about the dissolution chemistry
 of fluorapatite in acids is limited by chemical reaction:



But reactions having such high molecularity values are
 impossible. By using of various methods of solid surface
 state analysis (Scanning electron microscopy, Auger-
 electron and IR-spectroscopy, measurements of surface
 electrokinetical potential) and chemical analysis of acid
 solutions, I supposed a new five-steps dissolution
 mechanism for the chemical process (1), where the each step
 (reaction) has the molecularity value equal 2 or 3:



The obtained mechanism is useful for better understanding
 of chemical processes occurring in dental caries and
 artificial bones *in vivo*. More detailed description see^{1,2}.

REFERENCES

1. Dorozhkin S.V. Russ. J. Inorg. Chem., **38**, 1106 (1993).
2. Dorozhkin S.V. Russ. J. Inorg. Chem., **39**, 229 (1994).