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54. The biostructure of claim **1, 12, 16, 38** or **53**, wherein said biostructure comprises undercuts, recesses or interior voids.

55. The biostructure of claim **54**, wherein said undercuts or recesses comprise dead-end channels, grooves, dimples or tread-like features.

56. The biostructure of claim **1, 8, 12, 16, 38**, or **53**, wherein said biostructure is uniquely shaped or dimensioned for implantation into an individual patient.

57. The precursor biostructure of claim **53**, wherein said precursor biostructure comprises a calcium-rich reactant that facilitates the chemical reaction.

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58. The precursor biostructure of claim **57**, wherein the calcium-rich reactant is selected from calcium carbonate, calcium oxide, calcium hydroxide, and combinations thereof.

59. The precursor biostructure of claim **53**, wherein said precursor biostructure comprises a phosphorus-rich reactant that facilitates the chemical reaction.

60. The precursor biostructure of claim **59**, wherein the phosphorus-rich reactant is selected from dicalcium phosphate, monocalcium phosphate, phosphoric acid, ammonium phosphate, and combinations thereof.

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