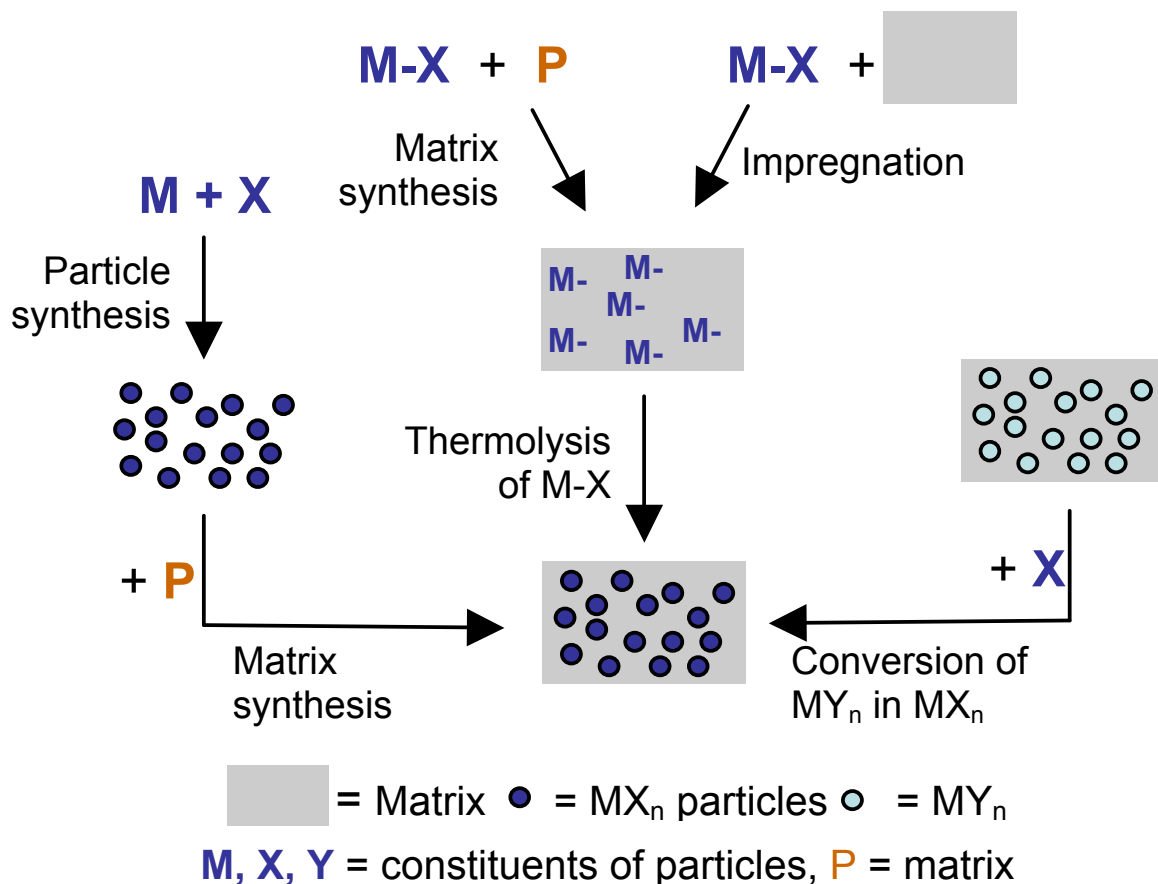


Nanoparticles in Host Phases by Bottom-up Syntheses

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Inorganic nanoparticles dispersed in a solid matrix (nanocomposites) can be prepared by several routes, such as pre-formation of the nanoparticles followed by formation of the matrix around the particles, formation of nanoparticles inside a matrix from (molecular) precursor compounds or post-synthesis conversion of nanoparticles by chemical reactions. Examples from own work will be given for each approach, focusing on formation of the matrix in the presence of a precursor compound (MX) which eventually will be converted into nanoparticles by controlled thermolysis. Composites comprising metal, metal oxide, metal nitride or metal silicide nanoparticles will be discussed as well as polymeric materials crosslinked by inorganic clusters (= small nanoparticles).