

Low-temperature crystallization of solution-derived oxide thin films assisted by photochemical processes

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The versatility of wet chemical methods allows the exploration of novel crystallization pathways for metal oxides thin films and makes them fundamental in the search of low-temperature methods. The benefits obtained from decreasing the processing temperature span from minimizing the environmental impact to reducing the production costs. More challenging is the preparation of complex oxide layers at temperatures compatible with their direct integration in flexible substrates (≤ 350 °C). However, their high crystallization temperatures (>600 °C) impede the development of such multifunctional devices. Following the conventional steps of a solution deposition method, we present...

... several (and complementary) low-temperature strategies using light as an alternative energy source to induce crystallization of the oxide layers by photochemistry. This requires the synthesis of novel photosensitive solutions and precise control over the reactions promoted by UV light. See more at:

Bretos et al., *Chem. Soc. Rev.* 47, 2018, 291–308

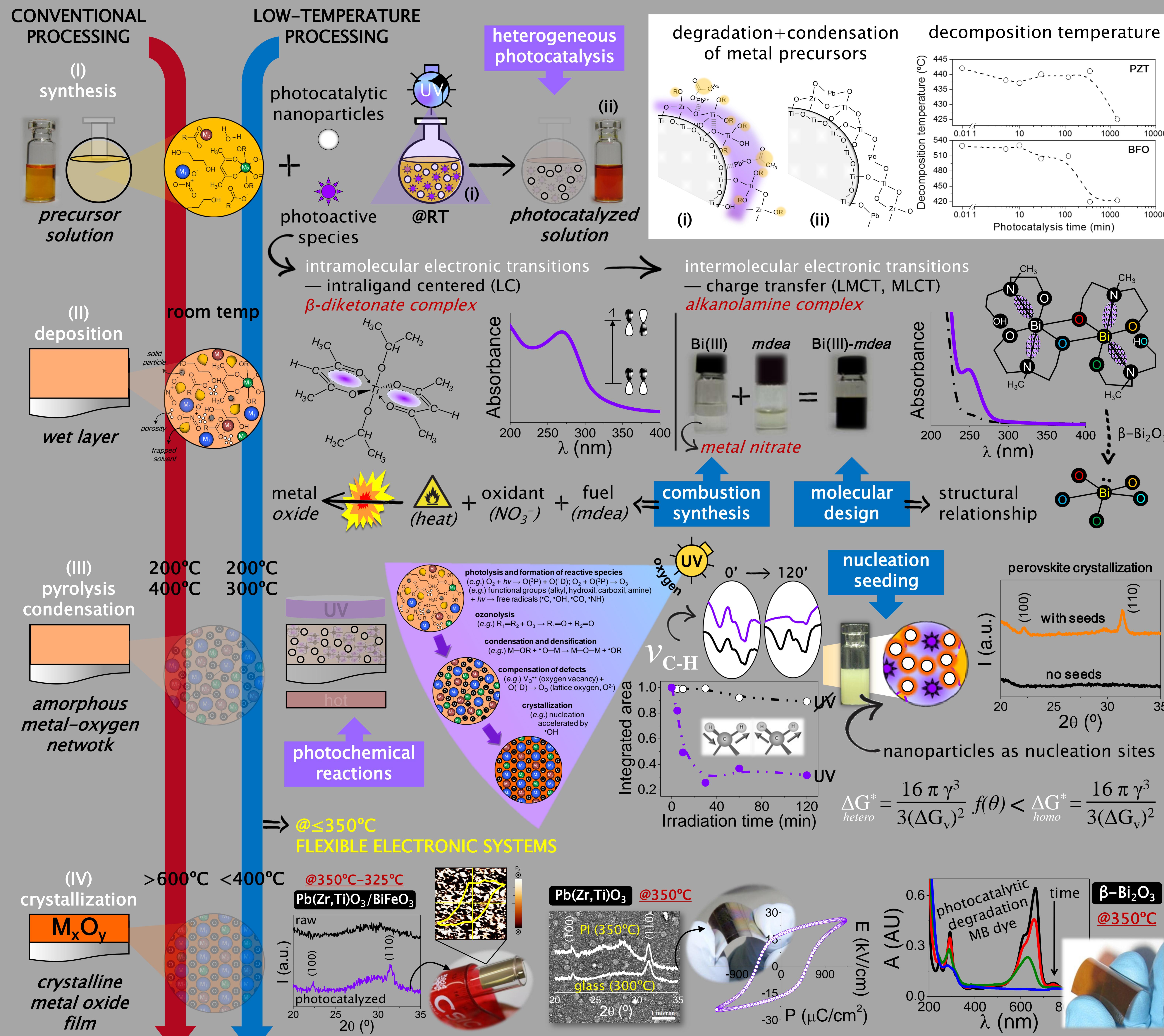
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Bretos et al., *Chem. Mater.* 20, 2008, 5731–5733

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