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Abstract: In the past decades, research into nanoscience and nanotechnologies has grown explosively and stimulated a large panel of scientific and technological fields. The boosting effect comes from either the reinvestigation of scientific fields by considering the nanoscale as a relevant level for improving our knowledge or from the extraordinary development of new tools that have democratized access to the nanoscale, such as AFM which is now a routine tool in most labs. This stimulating research has also reached the field of food science and biobased products. The INRA's Science for Food & Bioproducts Engineering division ('CEPIA') has been engaged in this huge challenge, and selected results are presented here.