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Multiscale modeling for bioresources and bioproducts

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Abstract

Designing and processing complex matter and materials are key objectives of bioresource and bioproduct research. Modeling approaches targeting such systems have to account for their two main sources of complexity: their intrinsic multi-scale nature; and the variability and heterogeneity inherent to all living systems. Here we provide insight into methods developed at the Food & Bioproduct Engineering division (CEPIA) of the French National Institute of Agricultural Research (INRA). This brief survey focuses on innovative research lines that tackle complexity by mobilizing different approaches with complementary objectives. On one hand cognitive approaches aim to uncover the basic mechanisms and laws underlying the emerging collective

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