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REALCAT : Advanced High-Throughput Technologies Platform for Biorefineries Catalysts Design

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PURPOSE OF THE ABSTRACT

REALCAT consists of a high-throughput platform, unique in the world, devoted to innovation in heterogeneous, homogeneous catalysis and bio-catalysis as well as their combination under the ultra-efficient novel concept of 'hybrid catalysis'. This integrated combination of skills and technologies enables high-level R&D catalysis development programs on hot topics including biomass valorization. The versatility of the platform also offers the possibility to run projects in the field of materials development.

Located in the heart of the Lille university, France, Realcat is supported by three high impact laboratories strongly implied in the development of the new sustainable bioeconomyt: UCCS (Unit of Catalysis and Solid State Chemistry), specialized in homogeneous and heterogeneous catalysis; the Institut Charles Viollette (ICV - USC INRA - EA 7394), specialized in biocatalysis and CRIStAL (Research center in Computer Science, Signal and Automatic Control of Lille), specialized in computer engineering, data treatment, bio-informatics, modeling and analysis of biologic systems. This offers to REALCAT a very strong scientific background in the field of high-throughput catalysis.

The REALCAT platform able to cover each of the steps of a catalyst development: The platform is actually equipped with robots for automated synthesis of catalysts and biocatalysts, rapid characterization tools, and ultra-fast tools for catalytic performance evaluation.
High-throughput technologies of the platform allow carrying out a large number of experiments in a minimum of time. A such approach considerably accelerates the development of new catalytic processes while being really cost-efficient.

The use of statistical experimental designs is an outstanding mean to further increase the efficiency of our high-throughput approach. It enables obtaining high quality, reliable and reproducible conclusions using a specific set of targeted experiments.

Finally, REALCAT is the first platform in the world that intimately integrates skills and technologies in chemistry, biotechnology, mathematics, computer science and statistics. This constitutes the main added value of REALCAT, which represents the first worldwide implementation of the next generation laboratory in the field of catalysis.

The flexible platform is open to research academic and/or industrials collaborations or for services, with respective staggered access fees under a secured and confidential environment. The only limitation of this fantastic tool is your imagination.

FIGURES

FIGURE 1
FIGURE 1.

Realcat: Advanced High-Throughput Technologies Platform for Biorefineries Catalysts Design
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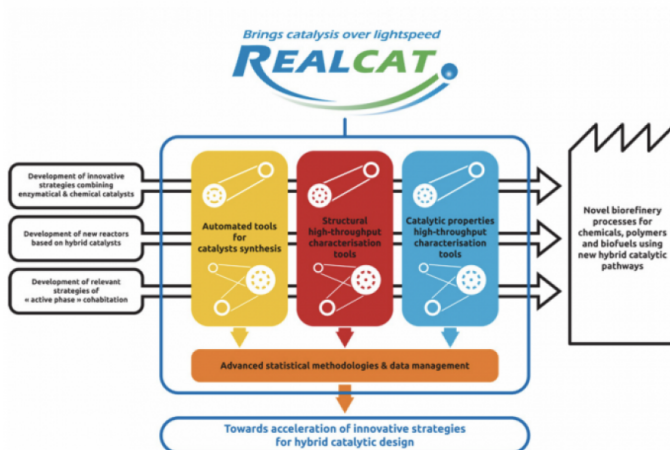
FIGURE 2
FIGURE 2.

Today REALCAT develops the catalysts of tomorrow REALCAT consists of a high-throughput platform, unique in the world, devoted to innovation in heterogeneous, homogeneous catalysis and bio-catalysis as well as their combination under the ultra-efficient no

KEYWORDS

BIBLIOGRAPHY