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dealing with both the
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chemical and
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the reactivity of heme
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systems because of
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the realization that a
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better understanding
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discipline can be
extremely useful for
the researchers from
either field. The
current progress of

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the research on
synthetic

metalloporphyrin

catalysts has led to

the development of

several systems that

are able to reproduce

the heme-enzyme

mediated oxygenation

and oxidation

reactions, at least in

terms of reaction

types, mechanisms

and often rates.

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These achievements have stimulated the of creating metalloporphyrin catalysts which are both ambitious project efficient and stable enough to become competitive for large-scale industrial processes. Although this project is still far from being realized, the efforts in this

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direction parallel
those aimed at the
application of heme
enzymes to chemical
technologies, e. g. for
the mild, selective
oxidation of organics
or the detoxification of
pollutants. Both the
two approaches will
be advantageous
because while the
enzyme systems can
achieve selectivities

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which are probably
unattainable by
synthetic catalysts,
the latter can be
active under
experimental
conditions that would
readily inactivate the
enzymes.

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high-K gate dielectric
are among the
greatest challenges
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numerous
analogue and
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materials of
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science, physics,

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are the red color

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in blood (heme)

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and the green in

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leaves

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(chlorophyll);

they are also

excellent ligands

that can

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coordinate with
almost every
metal in the
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natural systems,
porphyrins are
incredibly
versatile and can
be modified in
many ways; each
new modification

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yields

derivatives,

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the red color in
blood (heme) and
the green in leaves
(chlorophyll); they
are also excellent
ligands that can
coordinate with*

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*almost every metal
in the Periodic
Table. Grounded in
natural systems,
porphyrins are
incredibly versatile
and can be modified
in many ways; each
new modification
yields derivatives,
demonstrating new
chemistry, physics*

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as platforms for
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and Roger Guilard
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in the research field
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