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design is the focal
point of sound
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safety and ethics
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process equipment
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performance,
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and analyzing
existing processes
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costs, measuring
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more Synthesis

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a full section of
expanded and
revamped
coverage of
designing process
equipment and
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current equipment
Advanced steady-

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state simulation:
goals, models,
solution strategies,
and sensitivity and
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results Dynamic
simulation: goals,
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flow processing,
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ChE, is unique in

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this context given the range of scales and the complex economics associated with transforming existing batch-plant capacity. The book will be split into four distinct yet related parts. These parts will address the

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fundamentals of
analytical
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Safety*

*Analysis (PSA)
determines the
probability
and*

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*consequences
of accidents,
hence, the
risk. This
subject
concerns
policy makers,
regulators,
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engineers
working to*

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maximum safety
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analyzed using
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*first major
application
was to the
nuclear power
industry,
followed by
applications
to the
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industry. It
has also been
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*large scale;
these foods
are made by
mixing and
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different
ingredients in
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way. The food
industry,
historically,
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*processes in
an engineering
sense, i.e. by
understanding
the physical
and chemical
principles
which govern
the operation
of the plant
and then using*

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those principles to develop a process.

Rather, processes have been

'designed' by purchasing equipment from a range of suppliers and

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*then connecting
that equipment
together to
form a
complete
process. When
the process
being run has
essentially
been scaled up
from the*

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*kitchen then
this may not
matter.*

*However, there
are limits to
the approach.*

- As the
industry
becomes more
sophisticated,
and economies
of scale are*

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*exploited,
then the size*

of plant

reaches a

scale where

systematic

design

techniques are

needed. • The

range of

processes and

products made

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by the food industry has increased to include foods which have no kitchen counterpart, such as low-fat spreads. • It is vital to ensure the quality and

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*safety of the
product.* •

*Plant must be
flexible and
able to cope
with the need
to make a
variety of
products from
a range of
ingredients.
This is*

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*especially
important as
markets evolve
with time. •*

*The
traditional
design process
cannot readily
handle multi-
product and
multi-stream
operations. •*

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*Processes must
be*

*energetically
efficient and
meet modern
environmen tal
standards.*

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problems

*dealing with r
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dimensions All
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