

Excel Spreadsheets Chemical Engineering

Pinch analysis

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Pinch analysis is a methodology for minimising energy consumption of chemical processes by calculating thermodynamically feasible energy targets (or minimum energy consumption) and achieving them by optimising heat recovery systems, energy supply methods and process operating conditions. It is also known as process integration, heat integration, energy integration or pinch technology.

The process data is represented as a set of energy flows, or streams, as a function of heat load (product of specific enthalpy and mass flow rate; SI unit W) against temperature (SI unit K). These data are combined for all the streams in the plant to give composite curves, one for all hot streams (releasing heat) and one for all cold streams (requiring heat). The point of closest approach between the hot and...

ColorChecker

RGB color spaces, based on the applet described above, and a set of Excel spreadsheets for comparing these numbers to those in a digital camera or scanner

The ColorChecker Color Rendition Chart (often referred to by its original name, the Macbeth ColorChecker or simply Macbeth chart) is a color calibration target consisting of a cardboard-framed arrangement of 24 squares of painted samples. The ColorChecker was introduced in a 1976 paper by McCamy, Marcus, and Davidson in the Journal of Applied Photographic Engineering. The chart's color patches have spectral reflectances intended to mimic those of natural objects such as human skin, foliage, and flowers, to have consistent color appearance under a variety of lighting conditions, especially as detected by typical color photographic film, and to be stable over time.

In 2006, Gretag-Macbeth was acquired by X-Rite. In 2021, X-Rite spun off its consumer-level calibration products to a separate company...

Clarice Phelps

Chemical Society. Phelps is involved in several outreach projects to increase youth participation in the fields of science, technology, engineering,

Clarice Evone Phelps (née Salone) is an American nuclear chemist researching the processing of radioactive transuranic elements at the US Department of Energy's Oak Ridge National Laboratory (ORNL). She was part of ORNL's team that collaborated with the Joint Institute for Nuclear Research to discover tennessine (element 117). The International Union of Pure and Applied Chemistry (IUPAC) recognizes her as the first African American woman to be involved with the discovery of a chemical element.

Phelps was formerly in the US Navy Nuclear Power Program. At ORNL, Phelps manages programs in the Department of Energy's Isotope & Fuel Cycle Technology Division investigating industrial uses of nickel-63 and selenium-75.

Techno-economic assessment

TEA is typically performed using one of two platforms: spreadsheet software, like Microsoft Excel, or a process simulator, like AVEVA Process Simulation

Techno-economic assessment or techno-economic analysis (abbreviated TEA) is a method of analyzing the economic performance of an industrial process, product, or service. The methodology originates from earlier work on combining technical, economic and risk assessments for chemical production processes. It typically uses software modeling to estimate capital cost, operating cost, and revenue based on technical and financial input parameters. One desired outcome is to summarize results in a concise and visually coherent form, using visualization tools such as tornado diagrams and sensitivity analysis graphs.

At present, TEA is most commonly used to analyze technologies in the chemical, bioprocess, petroleum, energy, and similar industries. This article focuses on these areas of application.

List of numerical-analysis software

FlexPro is a program to analyze and present measurement data. It has a rich Excel-like user interface and a built-in vector programming language FScript

Listed here are notable end-user computer applications intended for use with numerical or data analysis:

Calculation of glass properties

several properties (e.g. atomic radius, atomic mass, chemical bond strength and angles, chemical valency, heat capacity) to gain scientific insight. In

The calculation of glass properties (glass modeling) is used to predict glass properties of interest or glass behavior under certain conditions (e.g., during production) without experimental investigation, based on past data and experience, with the intention to save time, material, financial, and environmental resources, or to gain scientific insight. It was first practised at the end of the 19th century by A. Winkelmann and O. Schott. The combination of several glass models together with other relevant functions can be used for optimization and six sigma procedures. In the form of statistical analysis glass modeling can aid with accreditation of new data, experimental procedures, and measurement institutions (glass laboratories).

Manufacturing in New Zealand

ISBN 978-1-98-853508-1. "2018 Census totals by topic" (Microsoft Excel spreadsheet). Statistics New Zealand. Retrieved 29 October 2019. "Industry (information

Manufacturing in New Zealand contributed \$23 billion (12%) of the country's gross domestic product and directly employed 241,000 people in 2017, while manufactured goods made up 52% of the country's exports by value. The food and beverage subsector alone contributed 32% of manufacturing's GDP and 71% of exports.

New Zealand has a disadvantage in export manufacturing due to its small population, isolated location, and high costs. Therefore, the majority of manufacturing is for the domestic markets, with the majority of exported manufactured goods being large-scale commodities (e.g. meat and dairy), high-value innovative products, and products targeting global niches.

Canterbury Christ Church University

Medway Engineering, Design, Growth and Enterprise (EDGE) Hub and new courses in Biomedical Engineering, Chemical Engineering, Mechanical Engineering, Product

Canterbury Christ Church University (CCCU) is a public research university located in Canterbury, Kent, England. Founded as a Church of England college for teacher training in 1962, it was granted university status in 2005.

Canterbury Christ Church University is a member of the Cathedrals Group (officially the Council of Church Universities and Colleges or CCUC), and of MillionPlus, the Association for Modern Universities in the UK.

Pressure vessel

formulas for thin walled pressure vessels, with examples Educational Excel spreadsheets for ASME head, shell and nozzle designs ASME boiler and pressure vessel

A pressure vessel is a container designed to hold gases or liquids at a pressure substantially different from the ambient pressure.

Construction methods and materials may be chosen to suit the pressure application, and will depend on the size of the vessel, the contents, working pressure, mass constraints, and the number of items required.

Pressure vessels can be dangerous, and fatal accidents have occurred in the history of their development and operation. Consequently, pressure vessel design, manufacture, and operation are regulated by engineering authorities backed by legislation. For these reasons, the definition of a pressure vessel varies from country to country.

The design involves parameters such as maximum safe operating pressure and temperature, safety factor, corrosion allowance...

List of organisations in the United Kingdom with a royal charter

Institute of Physics Institution of Chemical Engineers Institution of Civil Engineers Institution of Engineering and Technology; formerly: Institution

List of organisations in the United Kingdom with a royal charter is an incomplete list of organisations based in the United Kingdom that have received a royal charter from an English, Scottish, or British monarch.

There are over 900 bodies which have a UK royal charter. and a list of these is published by the Privy Council Office.

Organisations are listed with the year(s) the charter was granted. This may not be the same as the year the organisation was founded. Organisations may also have charters renewed or regranted, so multiple dates may be shown.

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