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We combine the
real and digital worlds

For German translation:
Please pick up a head-set at the stage

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Siemens & Gen AI
From theory to practice to scale
Hannover Messe 2024
Press Conference
Cedrik Neike, CEO Digital Industries at Siemens
... 2014

Remember Titan?
Generative AI has arrived
A new future for human and machine
It’s not sci-fi, it’s reality
Generative AI is transforming industry
Our societies are aging

Glocalization for resilient supply chains

Climate Change as a global challenge
But AI must be industrial
We make AI real
We make AI industrial
We make industrial AI easy
Künstliche Intelligenz

Siemens zieht Top-Forscher an


05.04.2024, 13.00 Uhr • aus DER SPIEGEL 15/2024
Siemens Industrial Copilot
From theory to practice to scale
And so can you!
Siemens Industrial Copilot is now seamlessly connected to the TIA portal
And available for download on the Siemens Xcelerator marketplace from **Summer 2024**
Siemens Industrial Copilot

SIEMENS | GRENDZEBACH
Predictive Maintenance: Senseye

Automated inspection: Machine Vision

CAD/CAM: Siemens NX

PLM: Teamcenter X

And many more...
Tony Hemmelgarn
President and CEO,
Siemens Digital Industries Software
Main variable speed drive DC motor

Properties:
- ID: 3-001-000335
- Name: Main variable speed drive DC Motor
- Revision: A
- Revision Name:
- Description: Main variable speed drive DC Motor
- Occurrence Name: Main variable speed drive DC Motor
- Reference Designator:
- Find Number: 10
- Quantity: each
- Unit Of Measure:
- Mutuality:
- Release Status: Approved
- Date Released: 29-Feb-2024
- Release Date:
- Element Effectivity ID:
- Element Effectivities:
- Variability Scope:
- Solution Variant Category:
- Is Variant Item: False
- Solution Variant Source:
- Owner:
- Group ID:
- Engineering
- Last Modifying User:
- Precise:
- False

Uses Semi-Components:
- Name
- Type
- Release Status
- Date Modified
1: Synthesis of Aspirin (Experiment)

Over history, many compounds obtained from nature have been used to cure ills or to produce an effect in humans. These natural products have been obtained from plants, minerals, and animals. In addition, various transformations of these and other compounds have led to even more medically useful compounds. During this semester, you will have an opportunity to isolate some pharmacologically active natural products and to synthesize other active compounds from suitable starting materials.

Aspirin is a compound used to reduce pain, anti-inflammatory and is used to reduce fever. One popular drug that does both is aspirin. The Merck Index, which is an encyclopedia of chemicals, drugs and biologicals, lists the following information under aspirin: acetylsalicylic acid, monoclinic tablets or needle-like crystals; mp 135 °C (rapid heating); is soluble but in moist air it is gradually hydrolyzed into salicylic acid and acetic acid; one gram dissolves in 300 ml of water at 25 °C, in 100 ml of water at 37 °C, in 5 ml alcohol, in 17 ml chloroform.

SYNTHESIS OF ASPIRIN (acetylsalicylic acid)

![Chemical Structure of Aspirin]

1. Place 2.0 g (0.015 mole) of salicylic acid in a 125-mL Erlenmeyer flask.
2. Add 5 mL (0.025 mole) of acetic anhydride, followed by 5 drops of conc. H₂SO₄ (use a dropper; H₂SO₄ is highly corrosive) and swirl the flask gently until the salicylic acid dissolves.
3. Heat the flask gently on the steam bath for at least 10 minutes.
4. Allow the flask to cool to room temperature. If acetylsalicylic acid does not begin to crystallize out, scratch the walls of the flask with a glass rod. Cool the mixture slightly in an ice bath until crystallization is completed. The product will appear as a solid mass when crystallization is completed.
5. Add 50 mL of water and cool the mixture in an ice bath. Do not add the water until crystal formation is complete.
6. Vacuum filter the product using a Buchner funnel. You can use some of the filtrate to rinse the Erlenmeyer flask if necessary.
7. Rinse the crystals several times with small portions (5 mL) of cold water and air-dry the crystals on a Buchner funnel by suction until the crystals appear to be dry of solvent. Test the crude product for the presence of unreacted salicylic acid using the ferric chloride test. Record the weight of the crude solid which probably contains some.
8. Stir the crude solid with 25 mL of a saturated aqueous sodium bicarbonate solution in a 150 mL beaker until all signs of reaction have ceased (evolution of CO₂ ceased).
9. Filter the solution through a Buchner funnel to remove any insoluble impurities or polymers that may have been formed. Wash the beaker and the funnel with 5 to 10 mL of water.
10. Carefully pour the filtrate with stirring, a small amount at a time, into an ice cold HCl solution (ca 3.5 mL of conc. HCl in 100 mL of water) in a 150 mL beaker and cool the mixture in an ice bath. Make sure that the resulting solution is acidic (fibre litmus paper) and that the aspirin has completely precipitated out.
11. Filter the solid by suction and wash the crystals with 5 mL of cold water each. Allow the dry crystals to transfer them to a watch glass to dry. Test a small amount of the
We are on a journey
It’s not sci-fi, it’s reality
It’s not sci-fi, it’s reality
Explore **Industrial AI** & much more at our booth
Overview: Siemens highlight exhibits and presenters

**Rainer Brehm**
CEO Factory Automation

**Katharina Westrich**
Head of Vertical Management Semiconductor

**Meiko Krause**
Head of Global Account Management and Strategy (Automotive Industries)

**Cedric Bardenhagen**
Sustainability Manager Motion Control

**Industrial AI - supercharging the digital and sustainable transformation**

**Semiconductors end-to-end showcase**

**The Sustainable Digital Enterprise for Automotive**

**Siemens EcoTech – A new standard for transparency of products**