

# A short presentation on molecules in L<sup>A</sup>T<sub>E</sub>X

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## 1 Introduction

- The chemistry packages

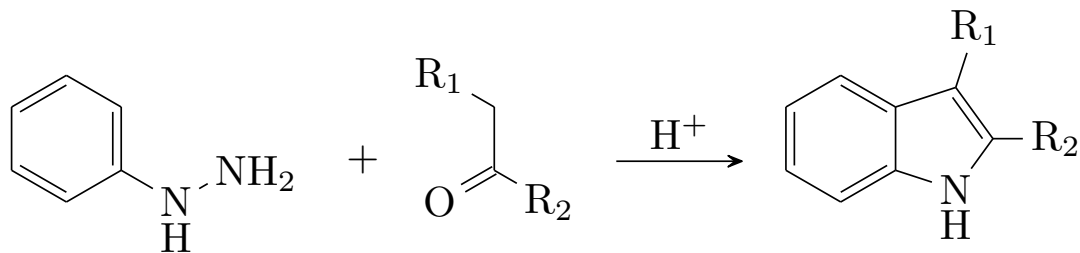
## 2 Using chemistry packages with L<sup>A</sup>T<sub>E</sub>X

- Chemical equations with `mhchem`
- Getting started with some `chemfig` coffee
- Experiments with water and rings

## 3 Where to go next...

# Introduction

- In these slides we show how Overleaf can be used with standard chemistry packages to easily create professional presentations.
- If you're new to  $\text{\LaTeX}$ , check out this free introductory course by Overleaf founder Dr John Lees-Miller: [www.overleaf.com/blog/7](http://www.overleaf.com/blog/7)
- You can also find more quick tips and tricks on the help pages at [www.overleaf.com/help](http://www.overleaf.com/help)



# The chemistry packages

We focus on two L<sup>A</sup>T<sub>E</sub>X chemistry packages:

## The chemfig package

This package provides the command which draws molecules. Created by Christian Tellechea, a detailed user guide can be found here:

[www.tex.ac.uk/ctan/macros/generic/chemfig/chemfig\\_doc\\_en.pdf](http://www.tex.ac.uk/ctan/macros/generic/chemfig/chemfig_doc_en.pdf)

## The mhchem package

The mhchem package provides simple commands for typesetting chemical molecular formulae and equations. Created by Martin Hensel, a detailed user guide can be found here:

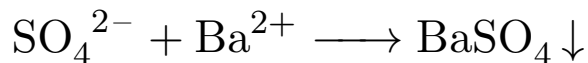
<http://mirror.ox.ac.uk/sites/ctan.org/macros/latex/contrib/mhchem/mhchem.pdf>

# Chemical equations with mhchem

- The `mhchem` package lets you write chemical equations in L<sup>A</sup>T<sub>E</sub>X with the minimum of effort.
- The example below shows how the standard representation of a reaction (on the left) is created from the simple code on the right:

$\text{CO}_2 + \text{C} \longrightarrow 2 \text{CO}$  is created with `\ce{C02 + C -> 2C0}`

- More complicated reactions are still easy to write:

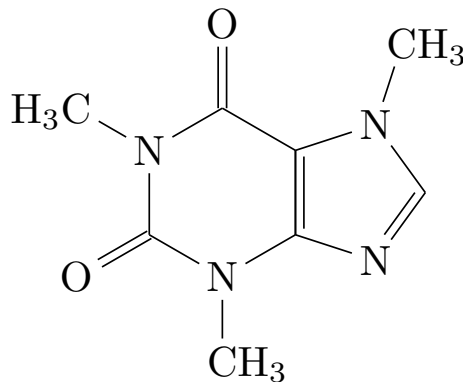


is created with

`\ce{S04^2- + Ba^2+ -> BaS04 v}`

# Getting started with some chemfig coffee

It's easy to use the `chemfig` package for drawing complex molecules:



This is the caffeine molecule, represented clearly and neatly, and built from a single line of text:

```
\chemfig{*6((=O)-N(-CH_3)-*5(-N=-N(-CH_3)-=)--(=O)-N(-H_3C)-)}
```

If that looks quite daunting, we can learn from simpler molecules... how about a single water molecule?

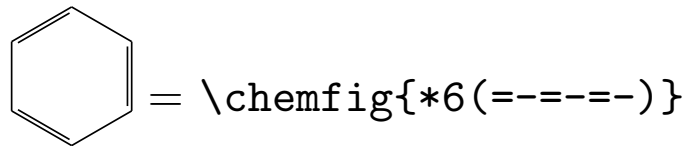
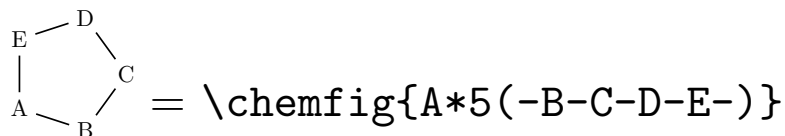
# Experiments with water and rings

To see how the `chemfig` package creates the drawings from your code, let us look at the simple water molecule:

H<sub>2</sub>O is created with `\chemfig{H_2O}`

The simple L<sup>A</sup>T<sub>E</sub>X code on the right is automatically converted into the molecular formula for water on the left.

Rings are similarly easy to code - consider the examples below:



# Where to go next...

- This short example was designed to introduce you to using Overleaf for scientific presentations.
- This is made possible by the many great packages that have been developed for L<sup>A</sup>T<sub>E</sub>X, including the two we focused on here (plus the Beamer package used for the overall presentation style).
- For more help on using L<sup>A</sup>T<sub>E</sub>X, see the links on the Overleaf help page: [www.overleaf.com/help](http://www.overleaf.com/help) or check out our free introductory course: [www.overleaf.com/blog/7](http://www.overleaf.com/blog/7).

Follow @overleaf on Twitter for all the latest news and updates.

Happy L<sup>A</sup>T<sub>E</sub>Xing!