

When Remote Manipulation Meets Pharma

DAY IN THE LIFE OF A CHEMIST

Without Automation ☹️



8.30am Cycle to work
Following the sanitizing routine before entering the lab

9.30am Preparing the medium

11.30am Medium ready (Hurray)
Running tests in a Glovebox

1.15pm Realise 15min late for a meeting, rush to the meeting

2.30pm Grab a quick bite as it's past lunch time

3.00pm Get to the desk to do the exciting job of

- Analyse test results from the day before
- Evaluate the experimental and simulation results

5.00pm Time to go back home with the journal whose revised manuscript submission deadline is the next day – Work through the night

With Automation 😊

8.30am Cycle to work

9.00am Following the sanitizing routine and enter the lab

- Power the robot up, hand in the manual with the day's medium preparation recipe to the robot
- Ensure all the ingredients are available to top up if needed and leave robot to prepare the medium

9.30am Get to the desk for the exciting jobs of analysing and evaluating results

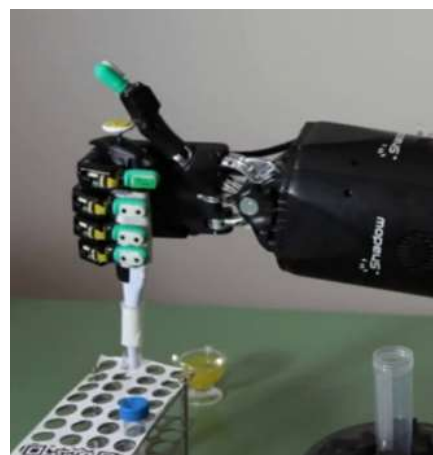
11.00am Short coffee break

11.30am Quick check of status on the computer 'Fume hood task 70% complete'
Running tests in a Glovebox

1.00pm Team meeting over lunch

3.30pm Review comments on the journal submitted

5.00pm Time to go home – Status:
'Samples in controlled conditions – 8.10hrs elapsed of 15hrs'
Cycle home feeling good & clear-headed – time to think about dinner!



SHADOW'S TELEOPERATION SYSTEM



The most advanced remote system helping to transform work within extreme environments by using human-like dexterous hands instead of humans

Potential applications in:

- Sterile manufacturing in Pharma
- Nuclear industry
- Oil & Gas – Deepsea operations
- Space

Extreme Environments

Challenges

- Health and safety risks to humans
- Limited working time
- Accidents in glovebox operations

Shadow's Teleoperation Solutions

- Added safety layer between worker and hazard zone
- Exposure time ↓ Operating time ↑
- System is intuitive, little need for reskilling