

Ami - The Chemist's Amanuensis

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Scenario: *Somewhere in the bowels of the chemistry building, Jane enters her laboratory*

Jane: "Hello Ami!"

Ami: "Good morning Jane"

Jane: "What's the reaction on the left?"

(Ami displays the details of the reaction)

Jane: "I want to make an observation"

Ami: "I'm all ears"

Jane: "Green, effervescing, no precipitate"

Ami: "Thank you"

(Ami adds the observation to the display)



What might life be like in a chemistry laboratory if the surroundings were more aware of what's going on?



Are there ways to help the chemist to access information, prepare their experiments, collect their data, and write up their observations?

Brainstorm:

- Easier data collection
- More automated
- Video monitoring

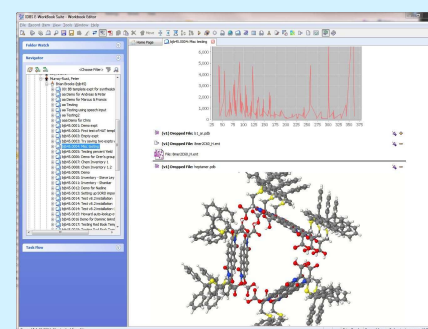
Example use-cases:

- I was away - when did it go brown & sticky!?
- That's not what I expected! I wonder if I remembered to add the magic ingredient?
- Did the temperature vary much during the reaction?

Ami Control Window

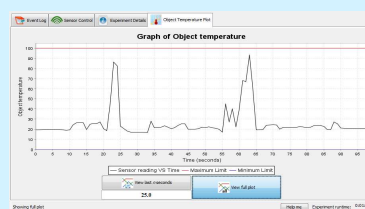
Time	Description	Status
14:50:26 (10/01/2011)	Sensor control	Stopped logging (3)
14:48:31 (10/01/2011)	Sensor control	Started logging (4)
14:47:37 (10/01/2011)	Comment	Water appears to be turning a deep br... (5)
14:46:49 (10/01/2011)	Tee	2.5g Added over 5.0 minutes (6)
14:42:42 (10/01/2011)	Large Ceramic Mug	Set up equipment (7)
14:41:30 (10/01/2011)	Boiling	Duration: 4.6 min Started (8)
14:40:57 (10/01/2011)	Water	350.0cm ³ Added over 5.0 minutes (9)
14:40:35 (10/01/2011)	Large Kettle	Equipment used (10)
14:39:10 (10/01/2011)	Milk	5.2cm ³ Waiting to be added (11)
14:38:33 (10/01/2011)	Sucrose	11.1mmol Waiting to be added (12)
14:38:02 (10/01/2011)	pm418	Created experiment (13)

Event log and chart of experiment activities



Results sent to
Electronic LabNotebook

Arduino infrared temperature sensor



Stop-Video timelapse reaction monitoring



Motion/proximity-triggered
video monitor of fume cupboard

