

AI @ Solvay AFIA FIIA 2021

Crédo PANIAH Lab AI - Connected Research Solvay R&I

Our vision Revolutionize the way we do R&I

Today



- Lab handwritten notebooks
 & scanned documents
- Disconnected lab equipments

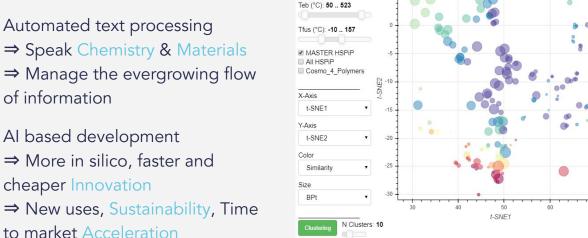




Tomorrow



- Lab 4.0: Automation, Robotics, High throughput
- ELN, Products' digital id card ⇒ R&I Data platform
- Production/Marketing data
- Data acquisition at its most
- Democratize data analytics
- AI + Internal/Public data



Display N: 1141

- Data Visualization & Statistics
- Automated text processing ⇒ Speak Chemistry & Materials ⇒ Manage the evergrowing flow of information

What we do AI & Data Analytics



Export table

12

13.1

11.4

11.9

9.8

11.5

9.3

11.1

15

Compute Similarity

10.6489169999 7.3480649

7

8.3

9.2

5.2

7.8

9.4

5.9

4.6

7 4

5.259032

In-house Tools Example

Search in data:

Name

450

70

CAS

872-50-4

2687-91-4

932-17-2

617-84-5

120-92-3

1696-20-4

127-19-5

88-12-0

108-94-1

765-43-5

602 44 2

Molecules display Cosmo Profiles Similarity

Euclidian dist

Similarity

0.17659941242 18

0.22555763843 17.8

0.22585016947 16.4

0.2281462880§ 17.9

0 23266351988 18 3

0.24025551103 16.8

0.26500965185 16.4

0.2730785774(17

0.20040210047 10

Cos Teta

0

DeltaD

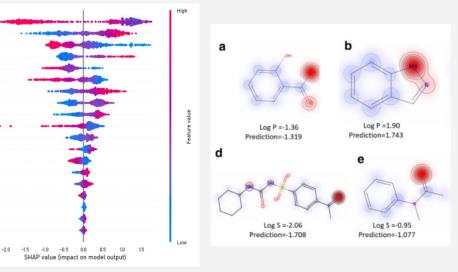
18.05648

0.27013174445 17.808542000(9.723602

Al @ Solvay How we work on building Trust

- Dashboarding: Data, Scores & Metrics Visualization
 ⇒ Trust building
- Models selection: Interpretability over Performance
 ⇒ Transparency
- Bias identification (human biases in historical data, models biases)
- Rely on Subject Matter Experts knowledge
 ⇒ Augmented Researcher (rather than researchers replacement)

Examples





Merci.



Progress beyond

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