***CA2 Strategic Thinking***

***Predicting Co2 Adsorption materials using***

***one machine Learning Algorithms***

*By*

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**Assessment Cover Page**

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Introduction:

Now a days we are facing and experiencing problem of the greenhouse effect in our society. Some of the countries are experiencing calamities like; landslides, earthquakes, and some countries in the past few years are having experienced the tsunamis that results a huge damage to some countries who experienced it. Many universities are having a study about the natural materials that can help to reduce the greenhouse effect and minimized the CO2 adsorption.

As I read academic papers that we use in our CA1. I discover that there are some materials that can be used as alternative to help lessen the emission of CO2 adsorption, it is very helpful because the materials are not so expensive and help the business sector to implement it to be used to sell to other companies in affordable price the materials and the business company can offer it to the customers in affordable price. It has a good benefit on both environment and the business sector.

On the dataset of CO2 adsorption, it has 3 natural materials that has different number of columns that we based on the academic paper that we have. The natural materials are interesting to learn since this can be easily found. The materials have a good used to the environment since it will reduce the probability of the greenhouse effect.

Dataset

The dataset consists natural materials which is very useful to have a lower effect of adsorption to lessen the greenhouse effect. To better understand the dataset this is the data dictionary with definitions and the data type that the CO2 adsorption dataset has.

|  |  |  |
| --- | --- | --- |
| Columns name | Definition | Data Types |
| Material Replace | Code for the class material. | Int64 |
| Material | Material used in the CO2 adsorption process. | object |
| Precursor | Is the material used in the initial adsorption process. | object |
| Conjugated microporous polymer | Chemical used in polymers material in the adsorption process. | object |
| Activation Agent | Chemical compound used in the carbon- based material. | object |
| Activation\_Temperature\_oC | Temperature used to agent activation in carbon-based material. | float64 |
| Activation approach | Technique used in the activation in carbon-based material. | object |
| BET surface area\_m2/g | Surface area of the material used in the CO2 adsorption. | float64 |
| Total pore volume\_cm3/g | Volume of the pore material used in the CO2 adsorption in 25oC. | float64 |
| CO2 uptake mmol/g\_25\_ oC | CO2 adsorption in 25oC. | float64 |
| Adsorption pressure\_bar | Pressure of CO2 adsorption. | int64 |
| Reference | Reference for academic papers results (Dziejarski et al., 2023, p.69-74). | object |