

## **Visualização de Informação**

# **Mapeamento entre parâmetros de fabrico e propriedades finais para produção eficiente de cerâmicos técnicos por impressão 3D**

Gil Teixeira, 88194

# Context

The objective is to visualize the influence of certain input variables in output variables to determine the inputs the production must optimize. The data comes from over 700 lab experiments done in Technical Ceramics production research. This can be made with Alumina (A) and Zirconia (Z) and by using a wide variety of methods. Some examples of Technical Ceramics are:

- Supports for Catalysts;
- Thermal/Electric Insulators.

# Input Variables:

- Method;
- % of Al or Zr;
- Pressure and thickness.



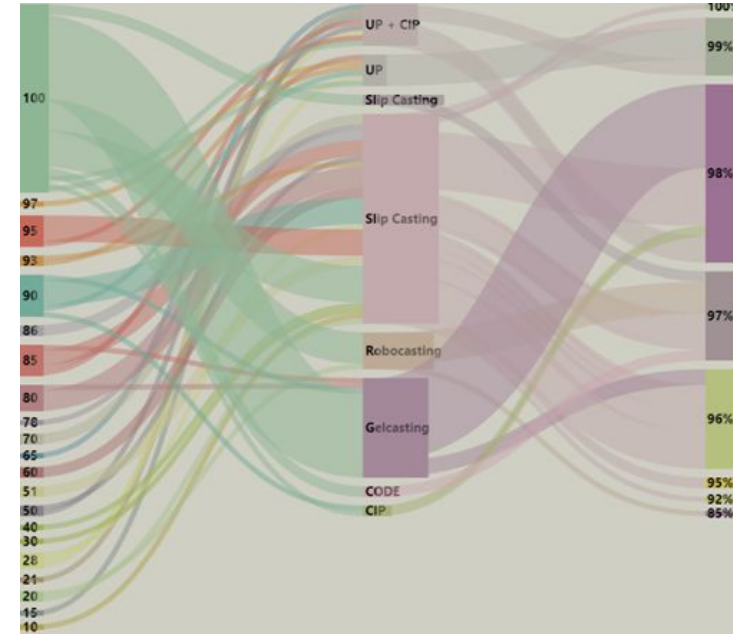
| 1st parameter | 2nd parameter | 3rd parameter: |
|---------------|---------------|----------------|
| Al (vol %)    | Technology    | RD(%)          |

# Output Variables:

- **Relative density;**
- Flexural Strength;
- Fracture Toughness.

## Visualization Solution N°1: Alluvial Plot

The Alluvial Plot, also called Sankey Plot, created shows the relationships in data between two given input variables and the Relative Density. It is easy then to follow the links and find the nodes that lead to the desired RD.



## Visualization Solution N°2: ScatterPlot

The X-axis corresponds to the output variable, Relative Density. Both Y-axis belong to an input variable each. The points, coloured the the same as it's input variable, help observing the relationship of one input variable to the output.

