

## Supplementary material D: Symbolic Regression Model for Middle Plasma Torch Temperature

The Python script for extraction of the year, month, day, hour, and minute from a string:

```
from datetime import datetime
# Datetime string example
datetime_str = '12/31/2023 16:00'
# Convert the string to a datetime object
datetime_obj = datetime.strptime(datetime_str, '%m/%d/%Y %H:%M')
# Extract the year, month, day, hour, and minute
year = datetime_obj.year
month = datetime_obj.month
day = datetime_obj.day
hour = datetime_obj.hour
minute = datetime_obj.minute
print("Year:", year)
print("Month:", month)
print("Day:", day)
print("Hour:", hour)

print("Minute:", minute)
```

The Python script to print the automatically extracted time-dependent contribution for modelling the active energy using symbolic regression:

```
import matplotlib.pyplot as plt
import numpy as np
# Define the function
def f(h):
    return -np.sin(0.44073 * h)
# Generate hours from 6 to 19
hours=np.arange(6, 20)
# Calculate the function values for each hour
values = f(hours)
# Plot the function
plt.plot(hours, values, marker='o')
plt.xlabel('Hour')
plt.ylabel('-sin(0.44073 * h)')
plt.title('Plot of -sin(0.44073 * h) for hours 6 to 19')
plt.grid(True)
plt.show()
```