


Packed Configuration Generator

Generates images with packed, image-filling, gas molecules.

- using Images

- using Random

```
imgPars = Dict(
  :sy => 540
  :sx => 960
  :col => Dict(
    :_Ar => (

      , 0.00934)
    :_O2 => (
      , 0.209476)
    :_N2 => (
      , 0.78084)
    :CO2 => (
      , 0.000314)
  )
)
```

```
• # Packed image parameters
• imgPars = Dict(
•   :col => Dict(
•     :_N2 => (RGB(0.2, 0.2, 0.2), 0.78084),
•     :_O2 => (RGB(0.2, 0.2, 0.8), 0.209476),
•     :_Ar => (RGB(0.2, 0.8, 0.2), 0.00934),
•     :CO2 => (RGB(1.0, 0.0, 0.0), 0.000314),
•   ),
•   :sx => 1920 ÷ 2, # 960,
•   :sy => 1080 ÷ 2, # 540,
• )
```

```
► Dict(:_Ar => 4842, :_O2 => 108596, :_N2 => 404799, :CO2 => 163)
```

```
• begin
•   nFact = sum(
•     imgPars[:col][K][2]
•     for K in keys(imgPars[:col])
•   )
•   imgSiz = imgPars[:sx] * imgPars[:sy]
•   iPixs = Dict{
•     K => Int(round(imgPars[:col][K][2] * imgSiz / nFact))
•   }
• end
```

```
•         for K in keys(imgPars[:col])
•     )
•     diff = sum(values(iPixs)) - imgSiz
•     if diff != 0
•         iPixs[:_N2] -= diff
•     end
•     iPixs
• end
```

```
• begin
•     IMG = reshape(
•         reduce(
•             vcat, [
•                 fill(imgPars[:col][GAS][1], iPixs[GAS])
•                 for GAS in keys(imgPars[:col])
•             ]
•         ),
•         imgPars[:sy],
•         imgPars[:sx]
•     )
•     save("11-packed-01-ordered.png", IMG)
•     save("11-packed-02-shuffled.png", shuffle(IMG))
• end
```