

Packed Configuration Generator

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

- using Images

- using Random

```
imgPars = Dict(
  :sy => 240
  :sx => 320
  :col => Dict(
    :_Ar => (, 0.00934)
    :_O2 => (, 0.209476)
    :_N2 => (, 0.78084)
    :CO2 => (, 0.000314)
  )
)
```

```
# Packed image parameters
imgPars = Dict(
  :col => Dict(
    :_N2 => (RGB(0.1, 0.1, 0.1), 0.78084),
    :_O2 => (RGB(0.1, 0.1, 0.2), 0.209476),
    :_Ar => (RGB(0.1, 0.2, 0.1), 0.00934),
    :CO2 => (RGB(1.0, 0.0, 0.0), 0.000314),
  ),
  :sx => 320,
  :sy => 240,
)
```

```
Dict(:_Ar => 717, :_O2 => 16088, :_N2 => 59971, :CO2 => 24)
```

```
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
```