Scattered Configuration Generator

Generates images with scattered gas molecules

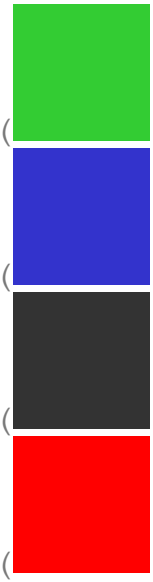
```
using Images
```

```
using Random
```

```
BG =
```

```
# Image background
BG = RGB(0.0, 0.0, 0.0)
```

```
imgPars = Dict(
            :libf => 6
            :sy => 540
            :sx => 960
            :col => Dict(
                        :_Ar => (
                        :_O2 => (
                        :_N2 => (
                        :CO2 => (
                    )
        )
```



```
# Scattered 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,
```

```
    :libf =>    6, # Linear Background Factor: one gas pixel in every (:libf)²
)
```

▸ Dict(:_Ar ⇒ 135, :_O2 ⇒ 3017, :_N2 ⇒ 11244, :CO2 ⇒ 5)

```
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 * imgPars[:libf]^2)))
            for K in keys(imgPars[:col])
    )
    Diff = imgSiz - sum(values(iPixs))
    #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])
            ],
            init = fill(BG, Diff)
        ),
        imgPars[:sy],
        imgPars[:sx]
    )
    save("21-scatrd-01-ordered.png", IMG)
    save("21-scatrd-02-shuffled.png", shuffle(IMG))
end
```