Graphene lighting

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Graphene foam – 3D form of graphene
Properties of invention

- High efficiency
- High Color Rendering Index (>99)
- Warm-white emission color
- Energy Saving

$\lambda_{exc} = 975$ nm
Properties of invention

\( \lambda_{\text{exc}} = 975 \text{ nm} \)

**Graph (a):**
- Intensity (a.u.) vs. wavelength (nm)
- Power levels: 1.67 W and 0.01 W

**Graph (b):**
- N coefficient vs. \( 1/r^2 \) (1/cm\(^2\))
- Spot area [cm\(^2\)]

**Graphs (c) to (f):**
- Intensity (a.u.) vs. Power (W)
- N coefficients: 3.02, 4.22, 4.74, 6.11

**References:**
Properties of invention

Multiply of excitation spots
- increase of overall intensity

Efficient photoconductivity
- Novel applications – solar converters

*W. Strek, et. al., Scientific Reports volume 7, Article number: 41281 (2017)*
Properties of invention

$sp^2 \rightarrow sp^3$ opening the gap

Development of invention

Different types of bulb demonstrator

First demonstrator

Edison-type bulb

Reflector bulb
Development of invention

The easiest way to create solar-like light

1. Graphene vacuum bulb/tube
2. LASER
3. Power Supply
Publications and awards

Patent in Polish Patent Office
Nr P.414821

Publications in Journals of Nature Group
Impact Factor : 13.60 and 4.84
Thank you for attention!

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