



Press Kit

Nano-Lit Technologies

OUR MISSION

To provide Human Centric Lighting and display solutions via the rich optics of Quantum Dots to the fields of work, education, transportation and health.

ABOUT

Nano-Lit Technologies was founded in 2013, based on our belief that light is essential to health and wellbeing. We exist because we believe light is an underutilised material, and we know we can harness new technology in lighting to benefit human visual and biological capabilities. Inspired by the Human Centric Lighting movement, we develop smart lighting products that imitate the spectrum and shift of sunlight, to optimise our health and improve performance. To create rich light that echoes sunlight, our products leverage the luminosity and colour capability of Quantum Dots. We are developing the potential of this advanced technology as we work towards our five-year goal of light as a fully-formable material.

VISION

Our vision is to create products that enhance our environment and support healthy living. Sunlight on demand. As designers, we see light as a material, something that can be formed and moulded and cut... and that sometime soon, we will use light, the same way we use plastic, wood, metal or glass. We have the expertise to bring a range of novel technology-based products to market on our journey to this bright future.

PRODUCT

Smart Diffuser

The Smart Diffuser is a lighting fixture that **shifts light temperature** in response to **real-time changes**. It **smartly responds** via five data sensors, which record sound levels, pressure, ambient light, and ambient temperature: towards a **tailored lighting experience** that reflects the **real-time needs** of users. For example, sound level data allows the Smart Diffuser to adjust its lighting relative to the **usage of the room** - thereby **increasing energy efficiency**. The ambient light sensor enables the Smart Diffuser to adjust its output relative to **how much light is needed**: on a gloomy day the Smart Diffuser delivers **bright daylight**, indoors.

The Smart Diffuser is **responsive, energy efficient, and healthy**. It's healthy because it delivers us the light quality that imitates the natural shift of daylight, thereby cueing **timely melatonin production** and **optimising** our **sleep-wake cycle**. That means that we feel more alert and focused during the day, and more relaxed in the evening: thereby **increasing productivity during the day** and **better sleep at night**.

THE SCIENCE

Our products are inspired by the **Human Centric Lighting** movement, which believes that lighting should be conducive to the **health** and **well-being** of the individual. To do this, artificial lighting should support the **human circadian rhythm**. Often referred to as our **body clock**, the **circadian rhythm** is a cycle that tells our bodies when to **eat, sleep, and wake up**. Mood, appetite, alertness, and sleepiness are triggered by hormones such as **melatonin** and cortisol, which are themselves **cued** by the daily cycle of the **sun**.

Traditional incandescent lighting **does not** reflect the quality, colour temperature, or shift of **natural light**, so therefore **does not support** our body clock and **doesn't help** us feel more focused and alert during the day and more relaxed at night. Traditional lighting just **isn't healthy**.

Human centric lighting has been proven to **benefit** shift workers in stressful work environments, improve **performance** and **focus** in the classroom and the office, and create **health savings** as users enjoy better health as a result of an **optimised sleep-wake cycle**.

Our products supports the human circadian rhythm by **imitating the shift** in **colour temperature** and **intensity** of the sun throughout the day, from **warm** light in the early morning to **bluer** and more intense light during the day, back to warm lighting in the evening. The blue light in the morning helps the body produce cortisol, the **alertness** hormone. Blue light also boosts our mood and appetite with serotonin, the **happiness** hormone. The warm light in the evening supports the **timely** production of melatonin as we relax, get sleepy and go to bed.

At Nano-Lit we want to provide human centric light solutions to promote **better light, health and well being**. To do this, we need to produce light as **rich, intense, variable as sunlight**. To produce the **highest quality of light** with **intense luminosity and colour capability**, we are harnessing **advanced lighting technology**, going beyond current LED technology. We are using **Quantum Dots** - the future of lighting design.

QUANTUM DOTS

What are Quantum Dots? A quantum dot is a **nanoparticle**, made of any **semiconductor** material such as silicon, cadmium selenide, or cadmium sulfide. They are so small you could fit **ten thousand** of them into a single strand of human

hair. Quantum Dots are tiny particles that can be excited by **light** or **electricity**: when they are excited, they emit **bright, rich, coloured light**. As they are semiconductors, they can be controlled, or **programmed**: that means they can **smartly respond** to current conditions and **shift** colour range and intensity. They are highly **efficient** at absorbing and emitting light.

We use Quantum Dots to produce a **rich** spectrum of **luminous** colour, and highly **tunable**, energy-efficient bright light. Quantum Dots are key to our creative **vision**, as we work towards our **future goal** of a smart, light-emitting, **fully formable** material.

SARAH MORGAN

Nano-Lit is led by Sarah Morgan CEO, who founded the company in 2013. Sarah Morgan is a Canadian industrial designer and entrepreneur with a passion for light. Nano-Lit grew out of her Masters Thesis at Pratt Institute, New York, in 2004, where she first became fascinated by the biological effects of light.

CONTACT

Sales: tim@nano-lit.com

Media: info@nano-lit.com