

Researchers shrink camera to the size of a salt grain

Researchers have developed an ultracompact camera the size of a coarse grain of salt. The new system can produce crisp, full-color images on par with a camera

TENAFLY, NEW JERSEY, USA, December 1, 2021 /EINPresswire.com/ -- Micro-sized cameras have great potential to spot problems in the human body and enable sensing for super-small robots, but past approaches captured fuzzy, distorted images with limited fields of view.

Now, researchers at Princeton University and the University of Washington have overcome these obstacles with an ultracompact camera the size of a coarse grain of salt. The new system can produce crisp, full-color images on par with a conventional compound camera lens 500,000 times larger in volume, the researchers reported in a paper published Nov. 29 in Nature Communications.

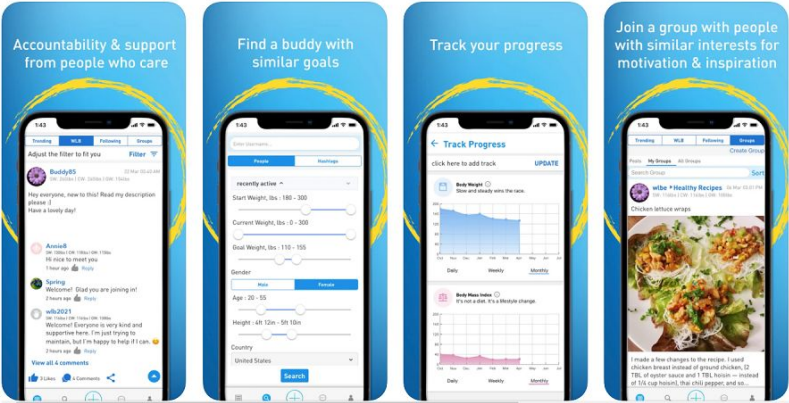
“

You can't help someone up a hill, without getting closer to the top yourself”

Joey Dweck

Enabled by a joint design of the camera's hardware and computational processing, the system could enable minimally invasive endoscopy with medical robots to diagnose and treat diseases, and improve imaging for other robots with size and weight constraints. Arrays of thousands of such cameras could be used for full-scene sensing, turning surfaces into cameras.

While a traditional camera uses a series of curved glass or plastic lenses to bend light rays into focus, the new optical system relies on a technology called a metasurface, which can be




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produced much like a computer chip. Just half a millimeter wide, the metasurface is studded with 1.6 million cylindrical posts, each roughly the size of the human immunodeficiency virus (HIV).

Each post has a unique geometry, and functions like an optical antenna. Varying the design of each post is necessary to correctly shape the entire optical wavefront. With the help of machine learning-based algorithms, the posts' interactions with light combine to produce the highest-quality images and widest field of view for a full-color metasurface camera developed to date.

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About WeightLossBuddy

WeightLossBuddy is the largest community dedicated exclusively to supporting people who are struggling to lose weight.

Its new app allows users to monitor their weight, while sharing their progress with others, and at the same time learning from their experience.

Not only are users able to chat live with other users, but they can also form or join groups to connect with people who have similar interests and goals.

Public & Private groups let them share their concerns with people they can trust.

Research has shown that people who have social support, tend to be more successful at achieving, and maintaining weight loss than those who do not.

In a 2010 study, almost 88% of subjects who joined an internet weight loss support community reported that being part of a group supported their weight loss efforts by providing encouragement and motivation.

In addition to a very easy to use platform, weightlossbuddy uses a familiar "posting" interface people are familiar with. It allows users to share both their successes and setbacks.

What makes the new weightlossbuddy app stand out from other apps is that it is non-toxic, safe, supportive, welcoming and easy to use.

Users can check in each day, post their progress, get encouragement and check to see how their friends are doing.

The new App helps users by giving them the support they need in a welcoming, non-threatening community of like-minded people who share their frustrations,

- WeightLossBuddy caters to those individuals who want to lose weight and need help.
- It helps by providing weight loss support from others on a similar journey.
- The new 100% FREE weight loss support app gives users access to a large weight loss community that is ready to encourage them, share effective weight loss tips, and help them in any way possible to reach their weight loss goal.

- COMMENT, LIKE, LIVE CHAT & POST

- Users of the new app can explore the social fitness & weight loss posts from weight loss buddy users that are on the same journey.

- Users can find great weight loss support content, read about other people's personal struggles to learn and relate, and like and comment on posts.

- Additionally, users can make use of Weightlossbuddy as their weight loss tracker and social weight loss app to post content, thoughts, struggles, progress photos, and more.

- Users can start chatting live with fitness buddies from around the globe within the app!

- WHY the NEW WEIGHTLOSSBUDDY APP?

Users can now:

- add current and target weight
- find a buddy and get support
- share photos and weight loss progress
- connect and chat live with other weight loss buddies
- comment and like on posts
- track daily weight

This New 100% FREE App can be found in both the [Apple](#) and [Google Play](#) stores. It has the ability to transform people's lives.

Joey Dweck

Weight Loss Buddy

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