

Endless Uses Seen For New "Paper" Batteries

Imagine opening a letter and a voice tells you what it says. Or better yet, the voices from the letter are from your parents, children, grandchildren or others important to you.

This and much more will be possible with new printable "paper" batteries developed by Power Paper Ltd., Kibbutz Einat, Israel. These zinc and manganese oxide cells are formed by laying down ink-like materials to create electric power on paper, eliminating the need for a sealed steel case.

The batteries can be "printed" onto any surface that could be printed on normally. Because they're just 0.5mm thick and can be made in any shape and size, uses for Power Paper batteries will be virtually endless, say designers.

Power Paper batteries can be used to add lights or sounds to a puzzle, greeting card or product box. They're also ideal for disposable microelectronic applications, such as single use medical devices, smart cards, and even product packaging that sells its contents.

Power Paper Ltd. will license its technology to manufacturers and also custom print batteries to specifications.

A 1-in. sq. Power Paper battery provides 1.5 volts, and costs only about 1 cent for materials and printing. The company says



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batteries will have at least a two and a half year shelf life.

Cells can be used in multiple combinations for higher voltages. All the ingredients are non-toxic and safe so they can be disposed of normally.

A printable rechargeable battery is also under development.

Contact: FARM SHOW Followup, Power Paper Ltd., Kibbutz Einat, P.O. B 12, Israel 49910 (ph 011 972-3-9007500; fax 011 972-3-9007505, E-mail: info@powerpaper.com; Website: <http://www.powerpaper.com>).



William Klein, Sr., shows how he adapted a White 6-row, 20-in. header to fit a Deere 7720 combine.

White Narrow Row Corn Head Adapted To Deere 7720 Combine

If you've ever considered switching to narrow row corn you'll want to take a close look at how Bill Klein adapted a used White 6-row, 20-in. header to a Deere 7720 combine.

Klein farms and also operates a welding shop in Flora, Ill.

"I recently sold my White combine and no longer needed the 706 N header that went with it so I sold it to my neighbor, who has a Deere 7720 combine. He wanted to switch to narrow rows but didn't want to spend the money for a new Deere narrow row header. The White header was about 15 years old but was in great shape.

"There's a big difference between the White and Deere header mounting system so I didn't know if the conversion would work. However, I was able to do it for a total cost of only about \$1,000, including labor. I think this idea could work for other farmers because used White 20-in. headers are widely available and can be bought cheap. I think the same conversion could be done to fit Deere 7720 Titan II combines, and possibly 9500, 9600, and 6620 models."

The main problem in adapting the White header was that it tilts toward the feederhouse at a different angle. In order to change the angle, Klein welded in a length of heavy, 4-in. sq. box beam at the bottom center part of the header. He welded in a steel filler plate on each side of the beam and also at the bottom of it.

The feederhouse on the Deere combine was equipped with spring-loaded locking pins designed to lock onto the header. To match the White header up to the pins, Klein drilled a pair of holes in a flat steel bar and welded it onto the beam. The spring-loaded pins fit into these holes.

The White header was equipped with an octagon-shaped shaft that slides into a pair of couplers on the feederhouse. Klein relocated the shaft and modified the couplers on each end of it so that they would fit the couplers on the Deere combine.

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CropKing sells complete systems for growing hydroponic crops, mushrooms and aquaculture.

Turnkey Greenhouse Business

A FARM SHOW editor recently spotted this ad in a farm paper. "Make More From 1/4 Acre Of Greenhouse Crops Than From 100 Acres Of Row Crops."

We decided to call the company that placed the ad, CropKing Inc., Seville, Ohio, to see what they have to offer.

CropKing sells complete systems for growing hydroponic crops, mushrooms and aquaculture, including greenhouse plans or complete buildings, production manuals and even business plans for managing income and expense when marketing produce.

Dan Brentlinger, CropKing president, says the company's 30 by 128-ft. free-standing tomato unit – the smallest commercial production unit it sells – can generate \$25,000 to \$30,000 in gross income. Their 1/4-acre, 3-bay unit, measuring 88 ft. by 128 ft., can generate from \$80,000 to \$100,000 before expenses. You'd have to have gross returns of \$800 to \$1,000 an acre from corn to match it. (That means you'd need 200 bu. corn sold at \$4 to \$5 per bushel, minimum, or 400 bu. corn sold at \$2 to \$2.50 per bushel.)

Brentlinger notes that labor for the greenhouse business is more than for 100 acres of row crops, but the need is fairly consistent year round, rather than extremely high for short periods of time a couple or so times a year, as in row crop production. Production expenses also run considerably higher than for 100 acres of row crops.

CropKing's business advisors are available to work with customers in budgeting, labor, acquiring production inputs, and in developing marketing plans.

A complete CropKing system includes the

greenhouse plus cooling, heating and air circulation systems (including fans, furnace, cooling pads, and ductwork), as well as air intake vent assemblies, environmental controls, plant support system for hydroponic production, electrical panel, and nutrient delivery system.

A freestanding tomato production unit, with 2-day training seminar on tomato production, plus production manuals, educational materials, monthly newsletters, a year of technical support and a professionally prepared business plan (that will impress your banker if you need financing) can be purchased for around \$30,000. Annual production costs would run from around \$1,500 up to \$2,600.

The company suggests starting a hydroponic greenhouse production business with tomatoes, particularly if you're within 50 miles of a reasonably sized urban market. If tomatoes aren't your thing, then ask about oyster mushrooms, bedding plants, cat flowers, or fish farming. For example, a multi-bay mushroom production system, complete with cooler, costs around \$50,000.

And if you're just interested in greenhouse growing for your own food production or as a hobby, the company also offers smaller houses, in sizes from 12 by 12 ft. up to 18 by 28 ft., as well as complete production packages so you can grow salad and herb crops, vegetables and more.

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This 30 by 128-ft. free-standing tomato unit can generate up to \$30,000 gross income.