justick
ELECTRO ADHESION PRODUCTS

Technology to simplify your world

justick
ELECTRO ADHESION PRODUCTS

Presented by: Dr Gerhard Ferreira

www.justick.com

Contents

justick
ELECTRO ADHESION PRODUCTS

Introduction

Justick™ products incorporate patented award winning electro-adhesion technology

Simply place materials and objects on the Justick™ surface and they will stick without the use of pins, glue, magnets or tape, just science...

Justick™ technology is ideal where permanent or semi-permanent adhesion is not required and is a logical alternative to conventional adhesion methods

Justick™meets the high regulatory standards (CE, ETL, CETL, CB) required in global markets as well as all safety requirements for home, office and commercial use

Justick at a Glance…

justick
ELECTRO ADHESION PRODUCTS

- *Justick International (Pty) Ltd, a South African registered company, invented and patented the Justick electro-adhesion surface. (2001)*
- *The South African market was used as a base to pilot production, gauge market perceptions, generate alliances with partners across the globe. Justick products have been tested in the market for several years and the success has led to an international expansion strategy. (available in over 20 countries globally)*
- *Justick received a gold medal in recognition of innovative excellence in the category of Office Supplies and Stationery. Also won the acclaimed XEROX Innovation Award and was awarded overall Grand Prix first runner up of all inventions, in all categories at INPEX 2006 – America's largest invention show*
- *In 2007 Justick was a finalist in the Technology Top 100 award for "Excellence in the Management of Innovation"*
- *In 2008 Justick proceeded to win the Australian Promotional Association's "Best New Promotional Product" award*
- *In 2011 Justick was also awarded as the winner for the "Desk Accessory" category at the Stationary Show in London*
- *In 2012 Justick won Australia's Best Office Products for 2012 in the Technology Category*
- *Justick continues to aggressively pursue innovation excellence ultimately leading to an internationally recognized quality brand*

Advantages

justick
ELECTRO ADHESION PRODUCTS

- *No need for pins, glue, tapes, magnets or conventional adhesion methods – non permament adhesion*
- *Material / Objects of various sizes adhere effectively due to electrode pattern and design*
- *Simple to use, fast and easy to position, move or remove your display materials and documents*
- *Holds materials flat over the entire surface, with no flapping, moving, or curling*
- *No damage to the display materials / objects – no pin holes or glue residue*
- *Non-tacky and easy to clean*
- *Battery or adaptor powered with amazing low energy consumption – 4 AA alkaline batteries will last 9 months or longer depending on the configuration*
- *Commercial opportunities*

Technology

justick
ELECTRO ADHESION PRODUCTS

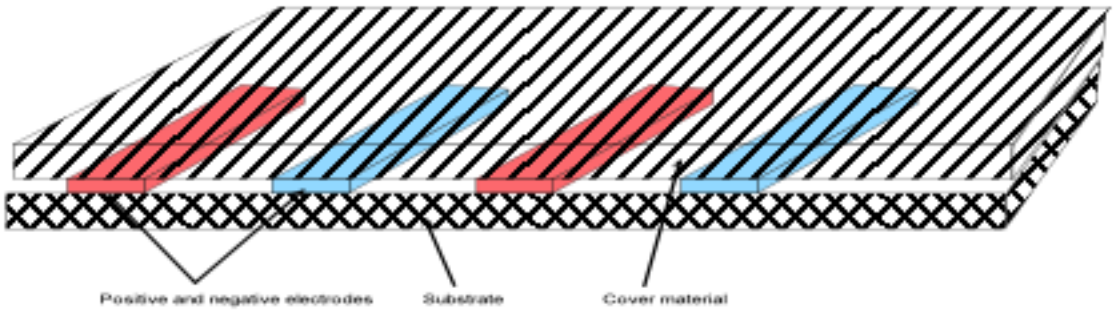
- *The Justick surface consists of conducting electrodes on a suitable substrate having a positive, negative polarity. A suitable cover material with specific electrical properties covers the electrodes.*
- *Conductive electrode pattern is optimized to attract materials of various sizes.*
- *Static electric field between the electro-adhesion electrodes is responsible for the attraction force resulting in Coulomb forces to attract materials for a variety of purposes.*

Technology

justick
ELECTRO ADHESION PRODUCTS

- *Adhesion is dependent on voltage and the thickness of the dielectric-film. By selecting the correct thickness and dielectric constant material and operating at a certain voltage, one has control over the attraction force, as quantified by the following equation:*

$$F = \frac{\varepsilon_0 \varepsilon_r A V^2}{2d^2}$$



Current Options / Configuration

justick
ELECTRO ADHESION PRODUCTS

- *Justick panels were primary designed for adhesion of paper due to temporary adhesion requirements typically used in display / notice boards environment*
- *Our focus to now have been on the display, educational, home and office environments – adhesion force configured to be optimal in these environments (easy placement and removal)*
- *With our current configuration and materials used the strength of adhesion is about 65g/ 50x90mm business card perpendicular to the surface*
- *Adhesion of torsion and vertical loads is much higher than perpendicular adhesion and will also depend on factors like surface contact area and friction coefficients*

Examples / Materials

(standard power configuration)

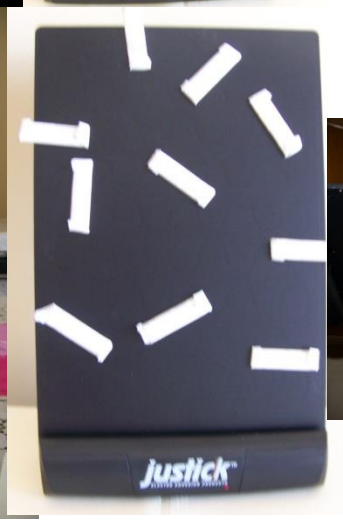
justick
ELECTRO ADHESION PRODUCTS











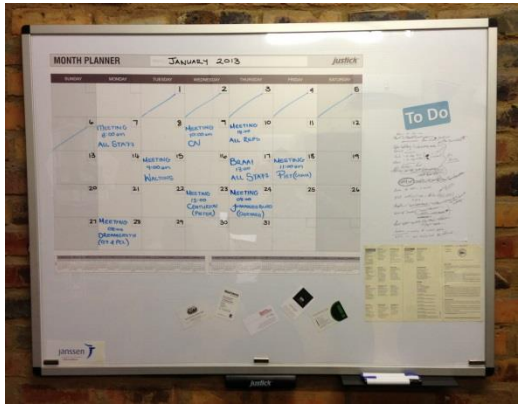

Future Options

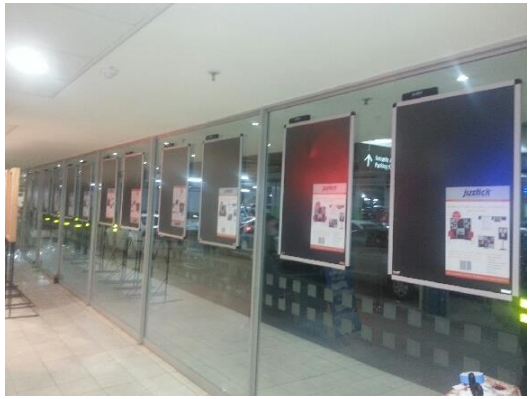
justick
ELECTRO ADHESION PRODUCTS

- *Adhesion strength can be increased depending on application and functionality required (voltage / distance / electrodes)*
- *Various substrate options - spongy surfaces is an option to improve 3D tolerance, but flexible strips might be more effective – material properties specified*
- *Flexible panels possible and already been produced – the flexible panel can adhere to rigid objects*
- *Solar power supply (ambient light) unit already manufactured and being tested*

Justick products and in use:

justick
ELECTRO ADHESION PRODUCTS





justick
ELECTRO ADHESION PRODUCTS

www.justick.com