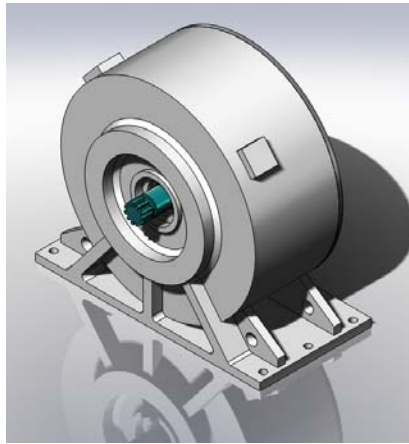


High performance customized Motors & Controls

BLDC motor (12KW) with Integrated Control (For Aerospace applications)

- Power 12KW, Torque 18 N-m
- Mass 20.5Kg, 2.5 Kg coolant inside
- Operative on 130 to 160V DC
- Duration 16 minutes in vacuum
- Designed for Reusable launch vehicle to run hydraulic pump with load fluctuation of 0 to max, at 7 Hz response
- First prototype delivered to Indian Space Research Organisation in Feb. 2008



High Efficiency Washing Machine Solution (Capacity 500W)

The BLDC Motor & Control solution is designed to cope up with the increasing demands of Energy Efficient products & aims at reducing solution cost by nearly 20%.

A new patented technology is used to dynamically change motor parameters, thus reducing size & cost.

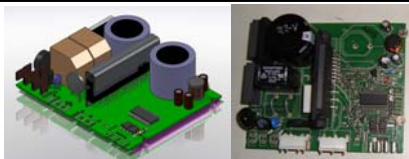
Two separate solutions for small & large sized Washing Machines with scope for End-user customization

Product / Technology of Torque Generator

The new theory is helpful in understanding the unanswered questions in Physics related to magnetism. The prototype has opened new doors in the area of Space Transportation. Some of the applications are Satellite orientation and positioning, placing geo-sync satellite in lower orbits & Making space transportation safer.

This research will be considered as a great achievement in this century

Apparatus name & model	:	Gravity Motor D10P4
Weight	:	17 kg
Power consumption	:	320 W
Torque Output	:	0.013 Nm (130 gram-cm)



Low cost, Low Power Variable Speed Control for Refrigerator Compressor

Latest state of the art design for Refrigerator Compressor which runs in both AC Vector & 6 segment sensorless control. The solution provides better efficiency at a lower overall cost of the solution in a constrained size of 110 x 90 mm.

Papers Published

- (1) **Flexible Speech/ Audio Coding** published in "Signal Processing..", Jan 1993, IISC, Bangalore, India
- (2) **Possible Generation of Gravitational Force (ICGA-5)** Oct-2001, Russian Gravitational Society,
- (3) **Universal Embedded Controller** in ISPC conference, March 2003

DSP BF532 based dual motor controller

Controls 2 motors independently, Suitable for multi-axes control, High performance servo control, Capacity 150W each channel



About SKD:

- ❖ S K Dynamics Pvt. Ltd. (SKD) was established in 1992 with sole purpose of pursuing R&D projects in the area of Electromechanical Engineering, Digital Signal processing, Power Electronics and System engineering.
- ❖ Since 1995 SKD is recognized by Department of Scientific and Industrial Research (DSIR), India as in-house R&D unit and now approved as **Commercial R&D Company**.
- ❖ Around **2 Million** Household appliances in the USA, Japan, Europe and China are working using SKD Embedded (Motor) Control Technology.
- ❖ Recently developed high performance Motors with power to weight ratio of 1 hp / Kg for Aerospace application. Also developed solutions using high performance DSP of 400 MIPS for motor control, vibration control, image processing etc.



Awards and Achievements

- ❖ DSIR National Award 2000 for Technology Export of Motor control.
- ❖ EEPC Award 2000 and 2001 for Services Export.
- ❖ ESC Award for Services Export in the years 1998, 1999 and 2001.
- ❖ NSIC Award for Electric Bicycle Technology in 1997.
- ❖ VNMM award by IIT – Roorkee to Mr. Rakesh Goel (CEO)



Core Competence

- Motors and Motor controls
- Digital signal processing & processors
- Embedded software
- Microprocessors & Micro controllers
- Power Electronics
- Electromechanical Engineering
- FPGA, Analog and Digital Electronics
- System Engineering /System Integration
- Product manufacturing capabilities & Prototype Manufacturing

Patents Granted/ Pending

- ❑ Control System for Permanent Magnet Synchronous Motor, US Patent 5,635,810 [Granted]
- ❑ Improved Gate Driver Circuit and Hysteresis Circuit, US Patent 5,675,276 [Granted].
- ❑ Geared Permanent Magnet Synchronous Motor (India, Application No. 1884/cal/96) [Pending]
- ❑ Electronic compass (India, Application No. 1011/cal/98) [Pending].
- ❑ Gravity Motor (Aug 03, 2000) [India Pending]
- ❑ Dedicated PMSM for washing machine (Oct 12, 2007) [Pending].
- ❑ Low Cost Tacho Generator (Nov 14, 2008) [Pending].
- ❑ Thrust and Torque Generation in space without reaction mass (April 2009) [Pending].
- ❑ Motor for Hybrid Vehicle (Dec. 2010) [Pending].

Products & Technologies Developed (Y2000 – 2005)



Submersible Pump



Sine Wave Inverter – ADMC326- SKD1F based



Blackfin DSP Control



Ethernet Camera



Sine Wave Inverter



CD Servo based on Blackfin DSP



Tracking Camera



UAV VTOL Toy

Past Products (Y1980-1990)



Recorders, Mech. Vibration generators, Transducers

Past Technologies:

CEO of S K Dynamics, Mr. Rakesh Goel, is Bachelor of Engineering in Electronics & Communication [Gold Medalist] from IIT Roorkee, India in 1977. He worked as a Technical Director and Partner in an engineering firm from 1978 to 1992 where he developed various projects and many Test Equipments. He then set up a new company S K Dynamics Pvt. Ltd. in 1992 with focus on R&D activities. But technologies developed between 1977 and 1992 are still available. Some of them being strain gauge based sensors, vibrating wire transducers, mechanical and electro-dynamics vibration systems, recording instruments, microprocessor based controls.



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