



"Bacterial Foraging-based optimal hardware architecture designing system"

"Seeking industrial partners for co-development, production and marketing"

Preface

- **With intent to position India as global hub for Electronic System Design and Manufacturing, Union Cabinet approved a program with an outlay of Rs.76,000 crore (>10 billion USD) in December 2021.**
- **The programme aims to provide attractive incentive support to companies / consortia that are engaged in Silicon Semiconductor Fabs, Display Fabs, Compound Semiconductors / Silicon Photonics / Sensors (including MEMS) Fabs, Semiconductor Packaging (ATMP / OSAT), Semiconductor Design.**
- **Application-specific processor (ASP), Hardware Accelerator, and Intellectual Property Cores are in the core of smart electronic industry.**
- **Timely access to leading-edge process technologies will set to decide market segmentation of this highly competitive industry.**
- **We are offering a method for designing optimal semiconductor hardware architectures for licensing.**

Market Size & Growth Projection

- **The global semiconductor intellectual property (IP) market is expected to grow from \$4.60 billion in 2020 to \$5.06 billion in 2021 at a CAGR of 10%. The market is expected to reach \$7.02 billion in 2025 at a CAGR of 8.5%. (source: ResearchAndMarkets.com)**
- **Recently announced Performance Linked Incentives by the Government of India will catalyze electronic manufacturing and increase demand of high performance semiconductor material.**
- **Impetus on indigenous military materials under DAP 2020 will enable preferential procurement of high performance electronic components by defence forces.**
- **Recent chip crunch has led many electronic companies to expand their manufacturing capabilities.**

Competition

- **Smart Electronic Industry is intensely competitive and characterized by rapid technological change, increasing levels of integration, product obsolescence and continuous price erosion.**
- **Patented process has competitive edge in terms of flexibility, efficiency, ease of implementation, and product performance making it an ideal choice for designing high performance IP Cores, ASP, Hardware Accelerators.**

i-TTO, a regional tech transfer office established at FITT with support from NBM, BIRAC



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The Technology

Design space exploration system driven through bacterial foraging for obtaining optimal hardware architectures.

Innovator

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Value Proposition

- *Efficiently generates optimal hardware architectures*
- *Automatic generation of hardware architectures*
- *Guided/adaptive multi-layer exploration*
- *Enhanced guarantee to escape local optima*
- *High flexibility for reaching real optimal solution*
- *Facility to analyze performance based on quality metrics*

Industrial Utility

- *Advantageously provides optimized hardware architecture*
- *Smart Electronics*
- *Intellectual Property Core*
- *Application-specific processor*
- *Hardware accelerator*

Intellectual Property

- *Granted patent in India*

Development Status

- *Proof of concept established through extensive experimentation.*

On Offer

- *Right to use and have used the process*
- *Right to make, have made, use, import, export, sell, and offer to sale the hardware obtained from the process*

Technical Support

- *Optional Technical Consultancy on payment basis*