



Position Description

Search # 11-05-033

**Manager**  
**Chemical Research & Development**

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Executive Search Consulting



Rendering of new Voltaix manufacturing facility located in Mt Bethel Township, PA—scheduled for opening in early 2012

## Company Background

**Voltaix. LLC**, is a rapidly growing, well funded and established manufacturer of high purity specialty gases and chemicals that enhance the performance of integrated circuits and thin film solar cells. Voltaix, LLC, founded in 1986 and headquartered in Branchburg, NJ, is a global leading provider of specialty gas and liquid precursors for use in cutting-edge integrated circuits, thin film solar cells and LCD displays, with particular expertise in germanium, silicon and boron chemistry. Voltaix chemicals enable logic chips to compute more quickly and solar cells to absorb a broader portion of the solar spectrum, and they improve manufacturability by minimizing defect formation and increasing machine throughput.

Voltaix currently formulates approximately 400 products from 40 different chemicals. Utilizing exceptional expertise in silicon, germanium and boron chemistry, Voltaix's products are custom designed for the most demanding applications, including: advanced DRAM computer memory; silicon germanium (SiGe) transistors for wireless communications chips; strained silicon for high speed logic computer chips (CPUs); copper enabling low K dielectrics for computer chips; and high efficiency thin film silicon solar cells.

Voltaix uses proprietary synthesis, purification, and packaging technology developed in house. The company also designs and builds their own equipment for use in its manufacturing operations.

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Co-founded in 1986 by **John de Neufville**, Ph.D., the [management team](#) is experienced and capable. The company operates sites in Branchburg, NJ and High Springs, FL and will soon open state-of-the-art manufacturing facilities in Korea and Upper Mt Bethel Township, PA. overlooking the Delaware River just south of the Delaware Water Gap. Voltaix employs approximately one hundred and thirty people and is privately held. The company became [ISO 9001](#) registered in 2002.

Backed by investments from **Intel Capital**, Novus Energy Partners and **Mission Point Capital** the company is expanding both its manufacturing and R&D capabilities to address current and emerging customer needs.

Voltaix actively cultivates on-going relationships with universities and industrial research groups and currently collaborates closely with IMEC in Belgium. Voltaix also has worked closely with **Arizona State University** under the auspices of grants provided by the **National Science Foundation**.

## Position Summary & Key Responsibilities

This is an outstanding opportunity for a well qualified candidate to join a team of experienced and highly motivated professionals at one of the fastest growing and best capitalized companies in the field of high purity specialty gases and chemicals.

Reporting to Matt Stephens, a long-term member of the senior management team at Voltaix and interim CTO, the new **Manager, Chemical R&D** will direct the daily activities of a research and development team composed of 5-8 individuals, and coordinate the early stages of the development process with joint development project (JDP) partners and other internal functional areas including health and safety, quality, operations, process development, and process engineering. The position is based in Branchburg, NJ and the bulk of his or her time will be spent working out of the Voltaix facilities there and in Eastern PA. Some travel, including international travel, will be required for the management of present and future JDA projects.

The mission of the Voltaix Chemical R&D Group is to propose and evaluate novel chemistries for synthesizing or purifying molecules currently or prospectively manufactured

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by Voltaix. The role of the Manager Position is to collaborate with the Chief Technical Officer and the Manager of the Process Development Group to:

1. select appropriate projects to these ends, based on a balance of perceived short-term and long term company needs, opportunities and R&D capabilities, and
2. manage these projects to well documented outcomes some of which are expected to lead to immediate scale up by the Process Development Group.

In this “hands-on” position the incumbent will serve a dual role as a principal investigator on key projects while initially guiding 3-4 other principal investigators on the R&D team. Over time the group is expected to grow to ----

The hired candidate will be responsible for the entire budget of the group (approximately \$2MM) and allocation of capital and human resources to each project. The new Manager, will work closely with the Senior VP, the CEO and the CTO to define R&D and Intellectual Property strategy, performance targets and measures. He or she will organize product development roadmap sessions, stage/gate reviews (if applicable), process hazards analyses and serve as the R&D administrator in the Voltaix quality system. As appropriate, the Manager, Chemical R&D will author proposals to federal agencies and will work with corporate partners to initiate and negotiate joint development projects.



## Experience and Competencies

The ideal candidate will possess 10+ years total experience in a research organization and two to four years managing a group of three to five individuals, including at least one Ph.D. chemist.

- Excellent oral communication ability will be necessary; e.g., external industry conference presentations as well as internal presentations at Voltaix.
- Project Management—successfully managed several R&D projects at once while delivering quality outcomes on schedule and within budget.
- Mentoring and leading—successfully managed a group of three to five, including at least one Ph.D, Chemist.
- Project approach – proven ability to develop research approach including state of the art understanding and research project planning.
- Grant writing (desirable but not required)-- successfully obtained external funding.
- Technical writing—proven ability to generate detailed research reports and one or more papers published in peer reviewed journal.
- Design of experiments and analysis of experimental data.
- Patent holding inventor or co-inventor; intellectual property creation and management. (a real plus, but not required).
- Chemical synthesis/manufacturing.
- Manufacturing Process scale-up.
- Chemical engineering fundamentals: e.g., distillation and adsorption.
- Cost modeling.
- Chemical vapor deposition.
- Chemical kinetics.

- Thermodynamics.
- Process hazards analysis.
- Chemical hygiene /OSHA regulations.
- Understanding of chemical vapor deposition and ion implantation processes.
- Understanding of ISO quality systems, statistics, statistical process control (SPC).
- Analytical chemistry techniques.

## Education

Ph.D. degree in chemistry, chemical engineering or materials science with experimentally focused thesis. Expertise in organometallic chemistry is a major plus.

## Personal qualities

- Capable setting priorities, meeting/exceeding deadlines and budgets.
- Can mentor junior staff and encourage their development as well as work well/effectively with experienced and very capable R&D and Process Development teams.
- Able to integrate and synthesize both technical/ commercial valuation potential and costs.
- An adept technical writer skilled in the preparation of technical articles and non-refereed publications.
- A pragmatic and innovative problem solver.
- Data rational individual with proven ability to process, categorize, and analyze large amounts of data.
- Demonstrated commitment to quality and safety as well as innovation.



## **Key Performance Indicators of the Job—“by when”**

### **First Six Months**

- Assess R&D work group and gain the confidence and respect of the research team. Formulate plan for optimizing present assets/personnel & acquiring new capabilities/resources.
- Develop clear understanding of the technical issues and challenges of the job and how they align with the broader strategic imperatives of the organization.
- Develop a detailed R&D staffing plan based on overall company goals and project needs.
- Obtain necessary safety training and familiarity with Voltaix systems to conduct at least one experimental campaign to gain insight into Voltaix processes and credibility with the team

### **First Year**

- Work effectively with the Chemical R&D and Process Development teams to initiate significant research and/or development activities in support of the technical management team’s (i.e.the CEO, CTO, COO and Chief

Scientist) assessment of the strategic technical goals, objectives and hurdles facing the company.

- Insure R&D group is focused and working effectively together on new research activities that will enable successful progress through the “stage gate” process development points including: production, finance, marketing/sales and executive leadership.
- Successfully lead one significant multi-month research project as a principal investigator. The role will be that of a player/coach during the first couple of years.
- Complete at least one invention disclosure.

### Second Year

- New products are well along toward being created---patent applications filed as necessary. New R&D Staff is being hired to meet increased client demand.
- Customers are experimenting with at least one product/process invented by incumbent since his/her arrival. R&D goals and objective measurements to gate process are in place. Performance against measures reported to top management refined.

### Third Year +

- R&D and Process Development areas of Voltaix are working together in a highly effective and collegial manner based upon the progress and success fostered by the leadership of the Manager, Chemical R&D.



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- Significant university, OEM and end user joint development activities have been initiated and conference and or refereed journal contributions from the R&D Team are occurring.
- At least one product/process invented by the incumbent is generating additional sales

### Compensation and Benefit Package

The compensation and benefits package for this position is highly competitive. Further details on compensation will be provided to qualified candidates.

### Interested Candidates

Please reply in confidence with cover letter and CV/resume to:

[MPRD@kulpercompany.com](mailto:MPRD@kulpercompany.com)



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