**Arsia Khanfekr**

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*U.S. Citizen*

**SUMMARY**

* Expert in Material science engineering, Nano materials, Thick film coated gas sensor, Semiconductor and catalyst convertor, Microwave syntheses and Sintering methods, Material testing and characterization
* R&D of new materials and Novel process; Equipment design; Failure analysis, skilled at a wide array of Mechanical testing techniques based on ASTM Standards, and Ordering materials needed for projects
* Project management, generating test data, designing, and providing test parameters

**EXPERIENCE**

**Advantest Semiconductors, Phoenix, AZ 06/20 – present**

**Sr. Material Test Engineer**

* Deep dive into failure analysis investigations, [Root cause analysis](https://asq.org/quality-resources/root-cause-analysis) (RCA) to uncover causes, [Failure mode and effects analysis](https://asq.org/quality-resources/fmea) (FMEA) for identifying possible product, service, and process failures
* Develop the test strategy to efficiently perform verification and reliability testing
* Document processes and standard operating procedures, keep and improve the process at its current level, monitoring process behavior and [Statistical process control](https://asq.org/quality-resources/statistical-process-control) (SPC) charts.
* Participate in cross-functional initiatives to develop new capabilities
* Make technology improvements and take an active role in optimization of the process
* Setup and maintain labs for fast paced testing/production environment, test data gathering, storing, retrieving and analyzing
* Collaborate in a team environment to develop new test solutions, propose process improvement initiatives

**Intel Corporation, Chandler, AZ 01/19 – 06/20**

***Failure Analysis Engineer***

* Working in a laboratory with the yield and defect characterization department
* Characterize new assemblies and determine the root cause of electrical and visual mechanical defects
* Techniques in field such as: Cross-section, Ion Mill, SEM/EDX, Keyence VHX digital microscope, X-ray, AFM, FTIR, Raman and XPS
* Conduct engineering tests to collect data and assist in research works
* BKM Development, developing new analysis techniques for cutting edge substrate technologies
* Demonstrated expertise in JMP statistical analysis Project management, generating test data, designing, and providing test parameters, Expediting test reports to appropriate parties.
* Assistance in provision of, or revision of, specifications and manufacturing instructions for existing and new products
* Documents the approved standards procedures for performing operations safety to produce and providing services and finally, reduce variation within a process.

**FLEX R&D, Pasadena, CA 12/15 – 01/19**

***Research Associate Engineer***

* Development of a proprietary flexible reclosure for food packaging for global brand owners
* Development of a lower weight, higher performance sustainable paperboard material for packaging application
* Produced custom prototypes for customization (imaging) of durable goods
* Produced custom material prototypes to demonstrate proof of principle around target functionalities specified by customers
* Responsible for day to day management of the laboratory, equipment, test methods, and work flow of Flex R&D
* In charge of installation, operation, maintenance, and trouble-shooting of the laboratory equipment
* Established standard operating procedures to adhere to internal regulation and quality standards (ISO and ASTM Standards)
* Developed and maintained blending techniques to target specific particle size distributions for control of ceramic material properties such as material rheology, shrinkage factor, material strength, and stability
* Process engineering and expertise in statistical process control procedure and charts

**SAPCO, Tehran 09/08 – 09/15**

***R&D Engineer***

* Researched and developed ceramic perovskite catalytic converter in dual-fuel vehicles
* Created new processes for vehicle catalytic converters up to the pilot point
* Develop technologically advanced products and/or processes that enhance product performance
* Develop new processes for hardware and software qualification and testing and perform process analysis
* Production of perovskite catalysts on ceramic monoliths with nanoparticles that reduces emission better than commercial catalyst with noble metals such as palladium, platinum, and rhodium
* Reviewed design, manufacturing technology and Developed innovative product development processes to shorten lifecycle of product time to market
* Designed, developed and conducted feasibility studies to assess new technologies or process improvements
* Designed and reviewed industrial plans in Nano and advanced materials with emphasis on Thick film ceramics and glass ceramic composites
* Used the microwave sintering technique to control the growth of ceramic nanoparticles, realize the uniform sintering of thick films, and gain the stable microstructure, which improved gas sensing behavior

**SKILLS**

* Expert in material Processing and Sintering (Nucleation-Growth, Calcinations, Particle Forming, Characterization Techniques, Tape casting, LTCC and HTCC Co fired, Consolidation and Grain Growth) for Advanced Materials
* Laboratory experience and Proficient in Analytical Techniques to characterize material structure and behavior, including:
* [Electron Microscop](https://en.wikipedia.org/wiki/Scanning_electron_microscope)y (HRTEM, SEM and TEM) and Keyence VHX digital microscope
* [Atomic Force Microscop](https://en.wikipedia.org/wiki/Atomic_force_microscope)y (AFM)
* Material characterization techniques (XRD, XRF, XPS, BET, FTIR, Raman, DSC, TGA, DTA)
* High-performance liquid chromatography (HPLC)
* Working with software: Cybersecurity (Xpertz), Image Analysis (Clemex, Image J), Materials Analysis Using Diffraction (MAUD) and Data analysis, graphing (OriginPro), Demonstrated expertise in JMP statistical analysis and Microsoft Office Suite
* Project management, generating test data, designing, and providing test parameters, Expediting test reports to appropriate parties, Assistance in provision of, or revision of, specifications and manufacturing instructions for existing and new products
* Documents the approved standards procedures for performing operations safety to produce and providing services and finally, reduce variation within a process.
* Process engineering and expertise in statistical process control procedure and charts

**EDUCATION**

* ***PhD, Material Engineering,*** University of Science and Technology (IUST), Tehran, 2011 – 2015; GPA:3.7
* *Dissertation:* “Syntheses of Nano Nb-doped BaTiO3 with microwave hydrothermal method and investigation on gas sensing properties”
* ***MS, Material Engineering,*** University of Science and Technology, (IUST), Tehran, 2008 – 2010; GPA: 3.8
* *Dissertation:* “Production of catalyst convertor with perovskite nanoparticles for dual fuel vehicles”
* ***BS, Material Engineering,*** University of Science and Research, (USR)Tehran, 2004 – 2008; GPA: 3.6
* *Dissertation:* “A study of various Types of Ceramic Refractories”