



9407-3, 20th Ave NW  
Edmonton, Alberta, Canada T6N 1E5  
Tel +1 780 395-7919  
<http://www.adven-industries.com/>

## Position Description

<b>Job title</b>	<b>Commercial Demonstration R&amp;D Engineer / Scientist</b>
<b>Reports to</b>	<b>CEO</b>
<b>Notes</b>	Full Time

Founded in October 2011 and headquartered in Edmonton, Canada, AdvEn Industries Inc. is a clean tech company that utilizes locally-abundant bitumen resources, develops and commercializes high performance materials and their derivatives for hi-tech applications.

Our mission is to build a fundamental “Material Technology” platform, converting hydrocarbon resources to non-combustion applications via superior performance, lower cost and cleaner environmental impact.

Our vision is 3C: to transform Carbon-rich residues/wastes into Carbon-based high-tech products using sustainable, low-Carbon manufacturing processes

### **Job purpose:**

The R&D Engineer / Scientist will investigate and develop carbon materials and products such as activated carbons for energy storage and petroleum derived polymers for carbon fibers and resins, and grow our current product portfolio and support expansion into new application spaces. This person should be able to synthesize new molecules, scale up new concepts from bench to pilot plant scale, and ultimately support the transition to commercial production. As a key member of a multi-functional R&D team, the candidate will provide chemistry leadership in driving new product development and commercialization.

### **Duties and responsibilities:**

- Analyze, synthesize, purify, modify and characterize petroleum-based materials in batch reactors, and carry out related process development work on new concepts to support scale-up to pilot plant and commercial scale.
- Collaborate with the Commercial and Application Development groups to understand market needs for new products; conceive of and develop new molecules from petroleum and its by-products/wastes based on our existing product portfolio and business strategies.
- Work closely with other scientists, applications specialists, and technicians to develop new products and technology platforms
- As a key member of a multi-functional R&D team, the candidate will provide polymer chemistry leadership in developing, testing, scaling up and commercializing carbon-based materials such as high end activated carbons for energy storage and high-performance carbon fibers.
- Develop quality control programs for raw materials, chemical intermediates and final products
- Maintain lab safety

### **Qualifications, Abilities, and Skills Required:**

#### **Minimum Qualifications:**

- PhD in petroleum and refinery chemistry, polymer science or material science with 0-5 plus years industrial experience
- Demonstrated ability to generate new technology and ideas
- Deep understanding of polymer structure/property relationship and modification of properties through polymer synthesis
- Creative, innovative thinker that is passionate about fundamentally understanding petroleum and polymer chemistry, synthesis, and structure/property relationships
- Hands-on experience in conducting polymer synthesis work
- Experience in conducting projects and collaborating with cross-functional teams (operations, business and marketing) to drive innovation
- Strong drive and execution focus to manage project milestones, timelines, and resources
- Ability to work both independently, and in team environments

#### **Preferred Qualifications:**

- Ph.D. in petroleum and refinery chemistry, polymer chemistry, polymer science or material science with 0-15 years industrial experience
- Direct experience in petroleum chemistry, oil refinery and polymer synthesis
- Track record of developing and commercializing new polymer materials
- Working knowledge in polymer processing methods (carbonization, activation, extrusion and others) and polymer applications preferred (carbon fiber, film, engineered plastics)
- Experience with statistical design/modeling tools to ensure effective experimentation and analysis.
- Excellent English communication and presentation skills and Teamwork capabilities.

**Working conditions:**

- Production plant, potential for heat, noise, dirt

**Physical requirements:**

- Long periods sitting
- Detailed work
- Stairs

**Direct reports:**

- None