

## CALIFORNIA STATE SCIENCE FAIR

## 2001 PROJECT SUMMARY



California Science Center

<b>Your Name</b> (List all student names if multiple authors.) <b>Anne-Isabelle Brousseau</b>	<b>Science Fair Use Only</b>  <b>S0604</b>
<b>Project Title</b> (Limit: 120 characters. Those beyond 120 will be ignored. See pg. 9) <b>Model Solar Car</b>	
<b>Division</b> _ Junior (6-8) <u>X</u> Senior (9-12)	
<b>Preferred Category</b> (See page 5 for descriptions.) <b>6 - Electricity &amp; Electronics</b>	
<p><b>Abstract</b> (Include Objective, Methods, Results, Conclusion. See samples on page 14.)          Use no attachments. Only text inside these boxes will be used for category assignment or given to your judges.</p> <p><b>Objective:</b> The purpose of the experiment was to show that it is possible to change the power source for a model radio-controlled car from a battery to a solar panel and to study the effect to the car performance.</p> <p><b>Materials and Methods:</b> A model electric car was assembled from a commercial kit, but was modified to accomodate solar panels instead of a regular rechargeable battery. Solar cells were selected based on the measured power requirements of the car and the available industrial silicon cells. The solar panel assembly was constructed from individual solar cells connected together in series on mounted on a carriage assembly made of plastic, plexiglass and balsa wood.</p> <p><b>Results:</b> Current and voltage requirements were measured from other model cars before the actual car assembly. Current requirements are related to the weight of the car and limit the feasibility of using solar cells since cell power output is proportional to light exposure and vary with car movements and external conditions (direction, angle).</p> <p><b>Discussion:</b> An intermediate power storage is required to make use of solar cells practical for this type of application. Solar cells are extremely fragile and require very careful assembly and proper mounting. Also, large power panels (with respect to car scale) are required to make this practical.</p>	
<b>Summary Statement</b> (In one sentence, state what your project is about.) Design and build a model radio-controlled car using solar panels as power source	
<b>Help Received in Doing Project</b> (e.g. Mother helped type report; Neighbor helped wire board; Used lab equipment at university X under the supervision of Dr. Y; Participant in NSF Young Scholars Program) See Display Regulation #8 on page 4. Father help in electrical design and soldering	