

Powered Armor – The Future of Warfare

1. Armor in the Media (Gary)

- a. Iron Man
 - i. Power: arc reactor
 - ii. Materials and Construction: bio-designed nanotechnology: lightweight, durable, collapsible
 - iii. Information Technology: HUD, JARVIS
 - iv. Weaponry and Flight: dual-function repulsors, “smart” missiles
- b. MJOLNIR
 - i. Power: compressed fusion reactor
 - ii. Materials and Construction: heavy, hydrostatic multilayer alloy
 - iii. UI: neural interface, AI; stresses placed upon body require previous conditioning
 - iv. Energy shields

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2. The Technology Involved (Nick)

- a. Power
 - i. Internal combustion
 - ii. Battery powered
 - iii. Solar powered
- b. Materials and Construction
 - i. Light but strong: titanium, carbon nanofibers
 - ii. Joints, motors, actuators, etc.
 - 1. Hydraulics
 - 2. Pneumatics
 - 3. Future – artificial muscles?
- c. User Interface
 - i. Responsiveness: most suits react to wearer's motion with computers and sensors
 - ii. Possibility of BCI Controls
 - iii. Motion amplification?

Examples

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3. Off the Screen and into Real Life (Sean)

- a. Cost vs. Benefit
 - i. R&D (research and development) is not cheap – on the order of hundreds of millions
 - ii. Modern warfare creates less necessity for “super warrior”
- b. Advance of Technology
 - i. As computer → laptop, current armor → Halo style armor
- c. What is currently possible
 - i. Weaponry - presumably attach a gun to anything
 - ii. “Wearware” (computer interface systems)
 - iii. Energy battery is extremely close - many ideas have potential
- d. Possible going into future
 - i. Jet packs unlikely. Alternative: AAN (Army After Next) has identified “leapfrogging ability”
 - ii. Materials: Halo style
- e. Other Applications: military research leading to civilian application
 - i. Firefighters/Construction
 - ii. Sport?

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