

BAFTA Film Awards 2013 Submission for the Category of Best Special Visual Effects

The Amazing Spider-Man (Marc Webb, Director, Columbia Pictures)

Overview: An international team of visual effects artists from more than a dozen companies, led by senior visual effects supervisor Jerome Chen, created roughly 1600 shots to help support the story of Peter Parker (Andrew Garfield) in his journey from angst-ridden teenager to superhero.

Designed from the onset to be a 3D experience, the film was digitally photographed in native stereo on RED Epic cameras (John Schwartzman, cinematographer, and Rob Engle, stereographer). For shots involving live action backgrounds, this required the visual effects work to be integrated into a stereo pair of images, compounding the technical difficulty of the project.

The special visual effects for this film were focused on creating the following:

The Superhero

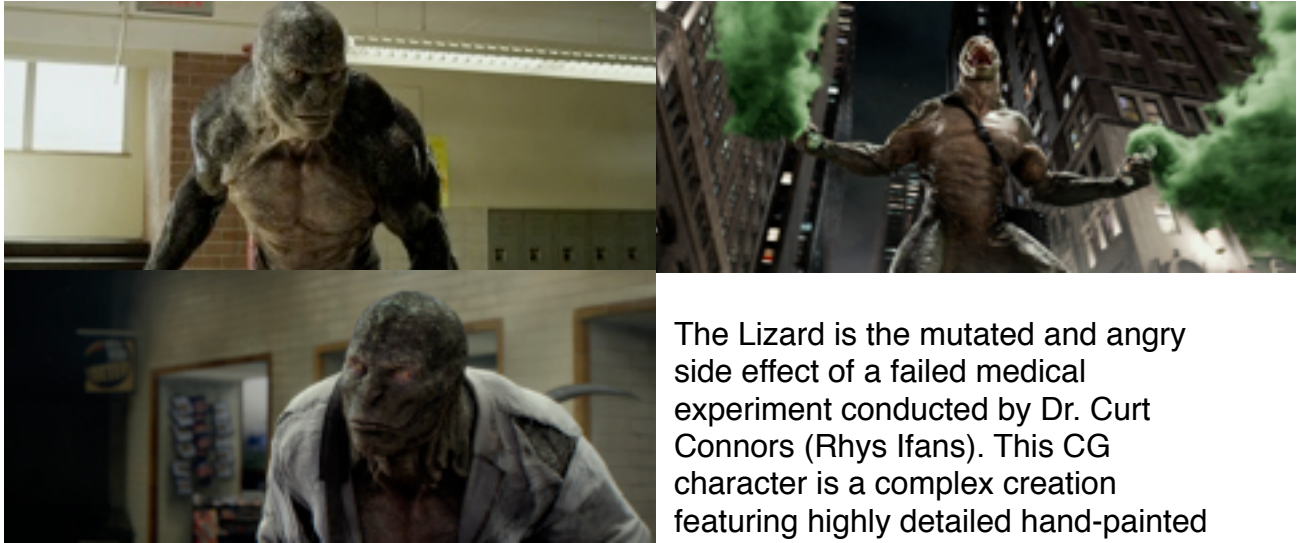


In his costumed form, Spider-Man's performance is a combination of both practical and fully digital techniques. Stunt coordinator Andy Armstrong and physical effects supervisor John Frazier worked closely to create wire and truss rigs to fly a costumed Andrew Garfield (or stunt double) for take-offs and landings - which were then blended with a full digital Spider-Man if the shot transitioned into a superhuman moment.

Animation supervisor Randy Cook (with David Schaub providing additional supervision) worked with the philosophy that though Spider-Man possessed extraordinary reflexes, strength and balance, he was still subject to the laws of gravity. In this regard, the animators studied the movements of Andrew Garfield (and stunt double) during stunts designed by Andy Armstrong. Cook and Schaub took careful note of body dynamics - paying special attention to those moments during swinging when the body would appear to reach an instant of zero-G during the apex. The animation team then incorporated these observations into their shots. No motion capture was used for the character - Spider-Man's performance is handcrafted.

The form of the digital character was painstakingly detailed to match the live action costumed Andrew Garfield, since shots using both would be cut against each other. Special care was taken to create properly deforming wrinkles in the suit, plus the presence of moving muscles beneath the fabric. For close-up CG Spider-Man shots, even frayed threads on the edges of the suit were added for realism.

The Villain



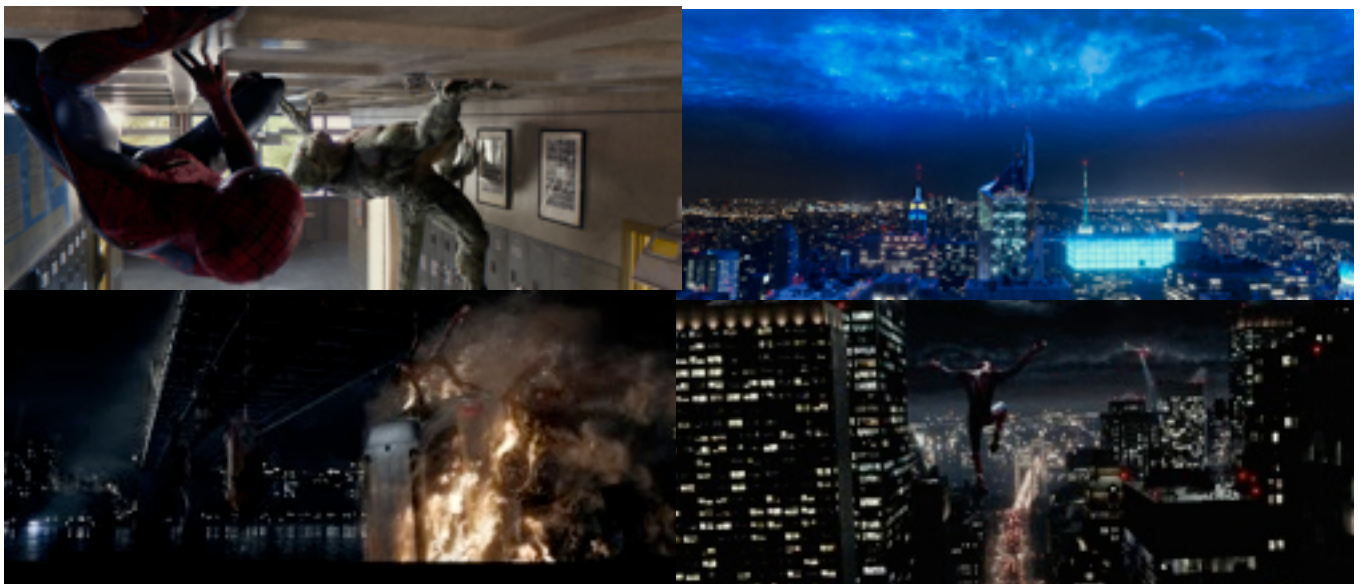
The Lizard is the mutated and angry side effect of a failed medical experiment conducted by Dr. Curt Connors (Rhys Ifans). This CG character is a complex creation featuring highly detailed hand-painted texture maps and special software to

simulate thick reptilian skin folding over the creature's heavily muscled frame.

Starting with a design from Legacy Studios, Imageworks' artists augmented the creature's face with key elements of actor Rhys Ifans to help provide a sense of visual continuity between the human and transformed states of the character. Taking real-life cues from the skins of Komodo dragons and other large reptiles, digital artists spent months painting dirt and grime incrustated scale patterns.

The animation team enjoyed creating the 200+ shots featuring the Lizard, providing performances ranging from dialog to all out hand-to-hand combat with Spider-Man. Facial animation was accomplished by animators referring to HD video of Rhys Ifans performing specific "Lizard" moments and interpreting it on the creature. Again, no motion capture technique was used.

The Battleground



The conflict between Spider-Man and the Lizard ranges from underground sewers to rooftops above Manhattan. Director Marc Webb's vision for this new chapter to the franchise grounded Spider-Man's world in present day New York City. However, production was filmed primarily in Los Angeles with just two weeks in New York for establishing shots featuring the principal cast.

The creation of the NYC backdrop was a collaboration between the VFX team and production designer J. Michael Riva, working together to plan the division of labor for where practical construction transitioned to digital extension. Complicated key sequences involved a full digital replica of Sixth Avenue, digitally detailed down to hot dog vendors and fire hydrants. Also, fight choreography between the Lizard and our hero required complex camera coverage which prompted the creation of a full CG sewer network and even part of the interior of a high school which seamlessly matched its live action counterpart. Real-world high dynamic range lighting reference was used to digitally light the characters and their environment to promote realism.

As various arenas of combat become ravaged by the Lizard and the Spider-Man, complex FX animation using destruction and fluid dynamics were utilized to help add visual complexity to the scenes and provide inspiration to the sound designers.

Key Participating VFX facilities:

Sony Imageworks: Character animation and rendering of digital Spider-Man and the Lizard, digital NYC featuring highly detailed Sixth Avenue, the Oscorp rooftop, digital sewer and underwater battle environments, CG biocable (webs), various destruction FX plus atmospheric particulates.

Pixomondo: CG Williamsburg Bridge and surrounding environs, fire and smoke FX for burning van exterior and interior, extension and compositing of bridge to BG while Peter rescues the child. Various shots of Dr. Connor's during mid-transformation.

Blur Studios: Design of the holographic interface for Oscorp's main computer, and execution of shots featuring Peter and Connors working with the interface.

Nerve Studio, Method Studios, Pixel Playground: Several hundred blue screen window composites, NYC extensions, monitor composites.