

**Roland Wittje \***

## **Nuclear physics instrumentation in Norway: 1933–1955**

THROUGH THE LATE 1940s and the 1950s, nuclear scientists, technologists and administrators in Norway were deeply split about the nation's goals, organisation, politics, and — essentially related to this — research instrumentation for nuclear science. One faction was determined to build Norway's first nuclear reactor, while another did not want a reactor at all. Whereas the first faction consisted of statesmen of science and research technologists, the second comprised academic scientist, most of whom had started their research career in nuclear physics in the 1930s. In order to understand this conflict, I will follow the development of research and instrumentation in nuclear physics both inside and outside Norway from the early 1930s to the mid-1950s. This period covers the time when scientists and engineers started to develop large-scale research instrumentation for nuclear physics research, followed by wartime experience and the American, British and German nuclear weapon projects, and ends with the beginning of the Cold War. The onset of the Cold War was characterised by secrecy in nuclear technology, the rise of the military-industrial-academic complex, particularly in the USA, and the beginning of European large-scale scientific co-operations. My overview will begin with early design and construction of particle accelerators by Odd Dahl and Rolf Widerøe, and follow the building of the first accelerator in Trondheim in the mid-1930s, the involvement of Norwegian scientists and engineers in wartime research and nuclear espionage and the post-war accelerator programs at the Norwegian universities. I will then look at the dispute about the building of the first research reactor, which went critical in 1951. My narrative will conclude with the early stages of Norwegian CERN cooperation up to the mid-1950s.<sup>1</sup>

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<sup>1</sup> The complete paper will be appearing in the Journal "Physics in Perspective" (2007).