**Persistent Luminescence in Non-Eu2+ -Doped compounds:**

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 In most luminescent materials, the decay of the light emission lasts no longer than a few milliseconds after the end of the excitation. This phenomenon is used in safety signage, dials and displays and decoration, but also in less obvious applications, such as night vision surveillance or in vivo medical imaging. Therefore we concentrated our research on making such materials and further develop them for a deeper investigation. To prepare the samples we would use silicates as the host crystal for a large part of the non-Eu2+ -based phosphors, and lanthanide elements as activators for the luminescence progress. Eventually the samples we produced and studied were as follows:

* Ca2MgSi2: Dy
* Ca2MgNiSi2: Dy
* Sr2MgSi2: Dy
* Sr2MgNiSi2: Dy
* Ba2MgSi2: Dy
* Ba2MgNiSi2: Dy

We found the melting temperature of the samples and then allowed them to crystalize. Both powder and crystalized forms were analyzed under the SEM, which gave positive results as they would luminescent after the electron beam hit. For further examination of the elements in charge for the luminescence the samples we used the epoxy method and carbon coated the samples for the PROBE and the X-ray radiation inspection.